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Railway Age

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SIXTY-THIRD YEAR

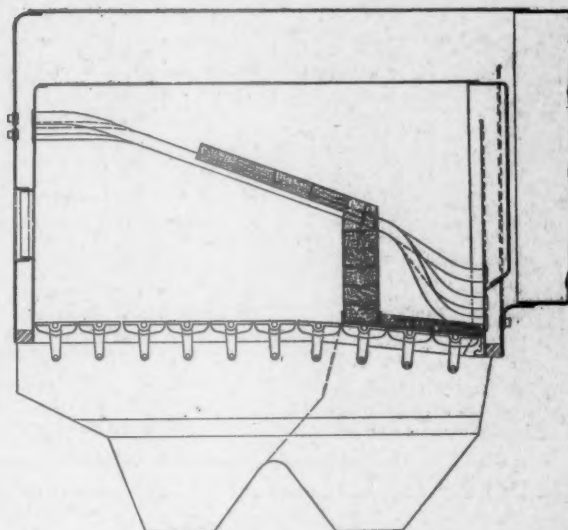
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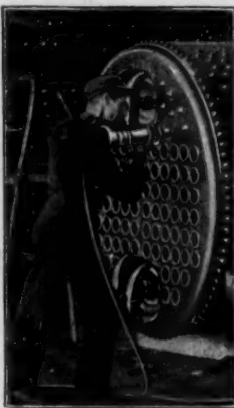
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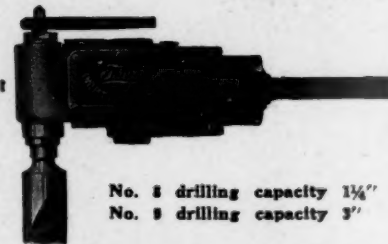
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Fig. 41

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It is safe to assume that every industrial plant in America is insured against fire, and most industries have much money invested in liability insurance for protection against accidents to employees and property damage, explosions, etc.

Insurance, however, does not prevent incendiarism, nor does it prevent accidents to men or damage to property. Insurance protects neither property nor human life. It merely protects an investment.

Most accidents occur at night and it is under cover of darkness that willful damage to property is generally done. Slumps in production and tie-ups in yard traffic are often wholly chargeable to insufficient light at night and during the dark hours of the day.

Adequate light is not only necessary for ade-

quate property protection and human safety but is also regarded as a vital aid to maximum production. And yet concerns that never neglect insurance often neglect lighting.

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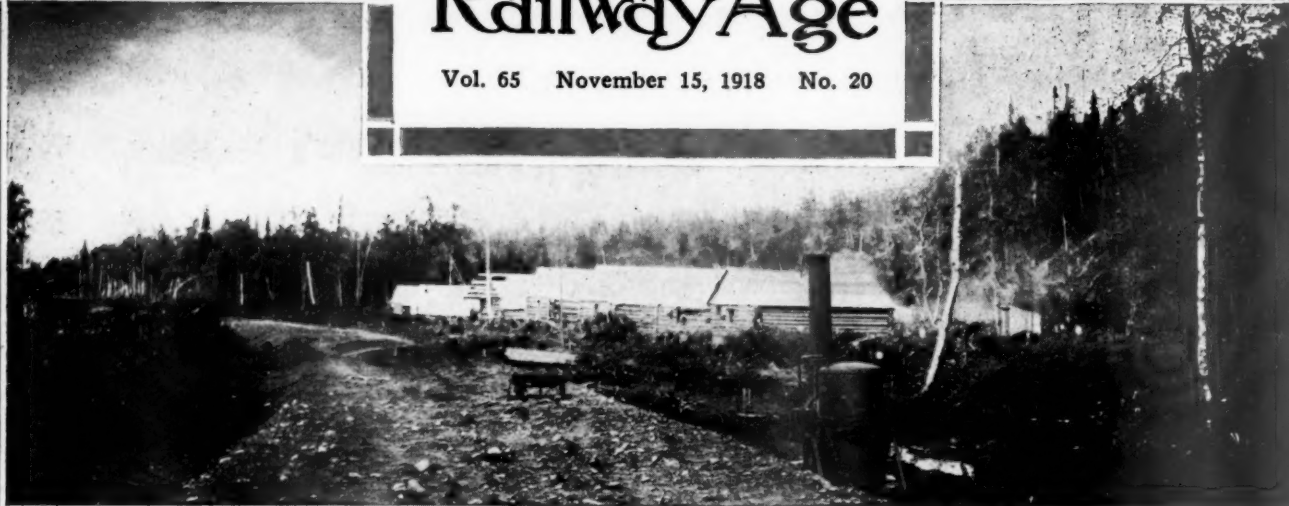
GENERAL ELECTRIC COMPANY

General Office, Schenectady N.Y.

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Railway Age

Vol. 65 November 15, 1918 No. 20



Grading for the Alaskan Railroad at Mile 221.

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EDITORIAL

Railway Age

"Railroad men tamper with switches." This is the somewhat startling headline on a safety bulletin which has been

Safety First and the Prayer Book

issued by George Bradshaw, supervisor of safety of the Pere Marquette, the Grand Trunk Western and other Michigan railroads. The substance of the bulletin is to the effect that in leaving main-line switches unlocked, breaking locks to save the trouble of finding or keeping a key, and other loose practices, yardmen and trainmen are seriously impairing proper discipline, as related to switches, and thereby may wreck trains. He calls upon the intelligent and thoughtful employees to aid in condemning bad practice and arousing the proper spirit in the thoughtless. This bulletin is commendable not only by reason of its substance, but also in its style. It fills just one page, 6 in. x 9 in.; but there is another page on which a very large photographic picture of a switchman, at a switch, helps to enforce the lesson of the bulletin; while on the front cover, or title page, in large type, the bulletin board where the sheet is to be posted and the classes of men to whom it is to be given, are set forth in graphic style, thereby impressing on employees that the bulletin must be read and heeded. Printing bulletins and then neglecting to see that the men give due attention to them has been one of the persistent sins in the railroad world. Mr. Bradshaw's document enforces this lesson. To "read, mark, learn and inwardly digest" is just as essential an injunction in the promulgation of railroad rules, as it is in the study of the truths of the prayer book.

With the demand for prompt handling of trains and for a general increase in the efficiency of transportation, every

Air Brake Conditions Must Be Improved

means must be taken to insure a train reaching its destination without delay when once it leaves a terminal. No better service to this end can be given by the mechanical department than to insure that the air brake equipment is properly inspected and well maintained. It has been found far better to hold a train at the terminal until the brakes are in proper condition than simply to make a perfunctory inspection and take the chance of a failure on the road. In order to do this properly there must be adequate facilities at the terminals for making the tests and repairs and a thoroughly competent and painstaking corps of air brake men to do the work. One of the western roads in particular makes a very determined effort to reduce its train delays on the road by careful inspection at terminals. From 10 to 16 men are assigned properly to inspect and repair each freight train before it is allowed to leave the terminal. By doing this it has been found that the trains can be run over a distance of 500 miles with despatch and without unnecessary delays at intermediate points which cause serious interruption to the operation of the road. It is far better to hold one train a few hours longer at a terminal than to send it out in a defective condition with a possible delay of a few hours on the line and the resulting delay to other trains. Cases are known where reinspections have shown a decrease of over 10 per cent in the operative brakes on a train. This is nothing short of criminal negligence and should be stopped.

Every road should be made to do its share of the work, and where facilities for testing and repairing are not available they should be provided.

There are few industries that can look forward to the problems of reconstruction with greater easiness of mind than

Supply Field Already "Reconstructed"

the railway supply field. The fact that railways are of equally great importance in peace or war puts the equipment builders among the fortunate few who will have to make but comparatively minor changes to get back on a peace basis. In fact, the industry has been referred to as having been on that basis for some time, or more particularly since various of the larger equipment builders were able to turn from munitions manufacture to the building of cars, locomotives or specialties for the use of railways here or in France. It seems to be generally agreed, further than that, that the coming of peace is going to prove most advantageous to the railway supply field. For the immediate present the supply companies are working on orders both for the Railroad Administration and for the American armies overseas. New and additional orders have been placed within the last few weeks for both and there is now in prospect an order for 100,000 freight cars for the Railroad Administration, the building of which will be facilitated by the release of steel from more direct war purposes. Following this there will have to be orders placed for the rehabilitation of the railways of France and Belgium, which will no doubt require a period of years. Extending into the more distant future there is the necessity for making up the demand for railway equipment and material of a world that has been practically unable to secure such supplies since the Kaiser (since retired) "cut loose" in 1914. An article on another page of this issue emphasizes that to fill this great demand for railway supplies there are but two sources, the plants in the United States and Great Britain, and it is a foregone conclusion that both countries will be overwhelmed with demands upon them for material. The railway supply field is indeed fortunate in having such splendid prospects before it for both domestic and export trade.

Now that the Railroad Administration can no longer call upon the public for co-operation in order "to win the war,"

The War Incentive for Economy

it will be interesting to note what changes will develop in the attitude of the railroad patron toward transportation service. Will he reassume a spirit of pronounced individualism with regard only for his own selfish interests or will the habit of working for the common good, acquired during the great conflict, persist? In this connection it is fitting to call attention to a typical result achieved through the excellent teamwork of the shippers and carriers. Loading statistics for government-controlled roads in 25 of the more important railroad terminals of the country, showed an average carload of 36 tons for the week ended September 21, 1918, as compared with 34.1 tons for the corresponding week in 1917. In addition, the figures indicate an increase

of 5.30 per cent in the tonnage and a decrease of 0.2 per cent in the cars used to carry the increased traffic. These data are conclusive evidence of the sincere efforts exerted by the shipping public during the war to conserve transportation facilities. With the incentive of military necessity gone, undoubtedly some will relax into careless practices. It is to be hoped, however, that the thorough lesson in co-operative effort learned during the historic period about to be closed, will not generally be forgotten. Under fear of defeat and economic disaster, the American people were forced to discard their wasteful habits and to husband their resources to the utmost. The shipper learned that he had to place his country's interests before his own immediate advantage. In doing so, he was working for his own benefit in the long run. Capacity car loading meant adding to the car supply. Loading heavily, he knew, increased his chances of loading again. Likewise the reduction of car detention for loading and unloading was known to be an effective means of accelerating car circulation and, consequently, of increasing the working supply of equipment. As it is unlikely that the freight traffic of the United States will materially decrease while the countries of Europe are being rehabilitated, it would seem that an intelligent conception of his own selfish interests would demand that the railroad patron continue, for some time, all the practices introduced during the war in order to make the most economical and efficient use of our transportation facilities.

The Railways and the Armistice Terms

IN NO INSTANCE has the importance of railways in warfare been better shown than by the terms of the armistice to which the German emissaries had to submit on Monday. The text of the armistice requires in section 6 that roads and means of communication of every kind, railroads, waterways, etc., shall be in no manner impaired. Section 7 demands that all civil and military personnel at present employed on them shall remain. Five thousand locomotives, 150,000 freight cars, 5,000 motor lorries, etc., shall be delivered to the associated powers within a period of 31 days. The railways of Alsace-Lorraine shall be handed over within a period of 36 days "together with all pre-war personnel and material. Further, material necessary for the working of railways in the country on the left bank of the Rhine shall be left *in situ*. All stores of coal and material for the upkeep of permanent ways, signals and repair shops, left entire *in situ* and kept in an efficient state by Germany during the whole period of armistice. . . ." Without further information at hand, it is a bit uncertain as to whether the "pre-war personnel and material" which must be handed over with the railways of Alsace-Lorraine are additional to the 5,000 locomotives and 150,000 cars specifically mentioned, but presumably they are additional. At any rate it is worth noticing that in section 2 of the text of the armistice demanding the immediate evacuation of invaded countries, Alsace-Lorraine is classed with Belgium and France and not with the Rhinelands mentioned in section 5. In thus losing Alsace-Lorraine, Germany loses about 3.6 per cent of its total railway mileage or about 1,250 miles. Assuming that Alsace-Lorraine has a similar proportion of the equipment of the German railways it will also mean to Germany the loss of about 1,000 locomotives and about 25,200 freight cars.

In view of the small amount of news that has come out of Germany since the beginning of the war, it is difficult to "guess" as to what proportion of Germany's total railway equipment will be handed over to Marshal Foch through the armistice. Excluding the 3.6 per cent for Alsace-Lorraine, the 5,000 locomotives and 150,000 freight cars given up for the period of the armistice will be about one-fifth of all of Germany's equipment of this kind. Before the war Germany

had 29,520 locomotives and 692,053 freight cars. How many it has to-day Marshal Foch has not yet told us, but there is no doubt that its ill-gotten gains in the way of railway equipment from northern France and Belgium in 1914 have long since been compensated for by losses through shell-fire, bombing and wear and tear such as the builders could never hope to make up for. The handing over of this vast amount of railway equipment, representing probably one-fifth of all the locomotives and freight cars in Germany, ranks with the important provisions of the armistice. The extent of the demand for it shows that despite the increased importance of motor transport in the war, the railways have again shown themselves of first importance as a weapon of warfare.

Precautions Against Freezing

A FEW WEEKS AGO the director general of railroads issued a statement asking the co-operation of shippers in the conservation of perishable food products. He said, "The loss of fruits and vegetables on account of freezing during the course of transportation in winters past has been enormous." He asks them to take extra precautions in packing and to watch the weather bureau reports and withhold shipments when very low temperatures prevail, or when they are forecasted. Is this an attempt to shift the responsibility for possible losses in foodstuffs this winter to the shoulders of the shippers? Can they be held responsible for inadequate equipment for transporting their products or the delays that are occasioned in transit, or again, for the lack of care given these products in transit? We must have food, cold weather or not. After a consignment is received by the railroads it is up to them to protect it to its destination. The food situation this winter will approach the seriousness of the fuel situation last winter, unless proper protection is afforded the perishables from the time they leave the hands of the producer until they are received by the consumer. What has been done to insure its protection? Can the responsibility be placed successfully on the shipper because of a lack of "extra precaution in the packing?"

It cannot be said that the seriousness of the situation has not been realized. The director general acknowledges it in his statement. The press has called attention to it repeatedly. In January, 1916, G. C. White of the Department of Agriculture, in a paper before the Second Pan-American Scientific Congress, called attention to the extremely poor conditions and classed as "archaic" the methods followed to provide adequate heater service for the protection of perishable freight.

The government is appealing to every citizen in the country to conserve food. We see signs everywhere, "Don't stop saving food." We are morally bound to persist in conserving food for the sake of our less fortunate allies and for people in the devastated sections of Europe. Are the railroads going to do their part? They must, or be ready to shoulder the responsibility for wastage, which if as great as that of previous years will be a most severe indictment. This loss can be controlled and materially reduced. There are insulated cars which are designed for proper protection of perishables in hot weather, but very few have adequate facilities for protection of their contents in cold weather. It is as necessary to provide artificial heat in winter weather to prevent freezing as it is to provide ice in summer to prevent decay, and this heat must be provided. There are heaters particularly adapted for just such service.

The big job for the railroads this winter will be to equip the cars with adequate heaters, to provide the proper equipment for handling the perishable freight and to eliminate delays between the shipping point and the point of delivery.

A Necessity in Time of War, A Virtue in Time of Peace

THE SHORTAGE OF STEEL, culminating in the drastic regulations governing the use of this material for non-war purposes, placed a serious responsibility on the railroads as heavy users of steel in the curtailment of their requirements by the salvage and re-use of old materials released from service. This did not mean the introduction of new or untried methods, but rather the general extension of practices that had been subject to more or less desultory application on the roads for years. There was room for much improvement in this direction. Some roads were giving little or no attention to such measures as is evidenced by the fact that one large road has been meeting its entire requirements for a certain class of equipment for the last three years by the reclamation of discarded equipment of this type purchased from a junk dealer, who in turn had acquired his supply from a neighboring road. Obviously if the second road could afford to reclaim this material after paying the junk dealer for handling it, the first road could reclaim it at an even greater saving. Even on the roads which have studied reclamation most thoroughly, new opportunities for savings have been disclosed by the increased study of this subject in recent months.

The conditions brought about by our participation in the war have, of course, done much to intensify this work and bring about a more general application of the practices followed by certain of the roads for years, and through the pressure brought to bear by the War Industries Board and in some cases through an absolute lack of the necessary new materials, the railroads of the country were being forced to do what they should have done of their own volition in times of peace.

Now that peace is at hand and the necessity for economy in the use of steel as a war measure has been largely removed, there is a danger that the advantages of the careful and conscientious reclamation of all materials released from service will be largely lost by a decreasing enthusiasm in the work. To avoid this there must be no lessening in the educational work which has been so largely responsible for the results produced thus far. The war has taught us the advantages of educational measures and such work must continue. The men must be taught that even in times of peace economy in the use of materials is just as important as the efficient performance of the full day's work.

Standard Car Lighting Specifications

THE SPECIFICATIONS for the electric lighting of cars, adopted by the Railroad Administration and published in the *Railway Age* of November 8, page 827, are an excellent example of what extreme standardization means. By these specifications the Railroad Administration has eliminated the high speed axle generators and a type of storage battery that has several desirable characteristics and which is widely and successfully used in this country. By limiting the pulley ratios to $2\frac{1}{2}$ to 1 and specifically mentioning the size of the pulleys it has offered discouragement to the manufacturers of high speed machines to further develop their products. For instance, one important manufacturer finds that in order to meet these specified requirements it will be necessary to use a generator weighing approximately 700 lb., whereas if a different pulley ratio were permitted a machine of 520 lb. which is a standard product, would meet approximately the same U.S.R.A. requirements of cut-in and full-load speeds, and with a different pulley ratio and a cut-in speed of 18 miles per hour

and a full-load speed of $20\frac{1}{2}$ miles per hour, a machine weighing 475 lb. could be used. With this reduction in weight there would be an accompanying decrease in the cost of the generator. High speed equipment has proved satisfactory and has its adherents.

Furthermore, for the sake of standardization but one size of ball bearing is specified, which if consistently followed will require one important manufacturer to redesign his unit with no operating advantages gained. The specifications also call for batteries of the Plante type, thus shutting out entirely the Edison battery. The latter type has many characteristics in its favor. It has been made standard on one of the largest roads of the country and is used extensively on other roads. It is particularly rugged, light in weight and easily handled, and in cases where the equipment is required to stand for a considerable time with the lights in operation, it is found particularly desirable.

While the specifications represent good practice they are so narrow that further development in the electric car lighting industry will be materially hampered and economical operation will be restricted. This is contrary to American ideals and will result in the subjugation of progress for the idealistic and undesirable plan of extreme standardization. These specifications represent perhaps the most drastic attempt thus far made to limit progress and confine railroad practices to narrow limits.

The Railroads After the War

ALTHOUGH THERE STILL REMAIN unsettled numerous important and complicated problems growing out of the government's action in taking over the railways last December, the virtual termination of the war naturally brings to the front again the question of the future of the railways, a question by no means lost sight of, although rather kept in the background during the past few months. This represents one of the important reconstruction problems now to be faced and although it is less immediately pressing than some of the others, because of the provision in the federal control act for a period of readjustment, it is not too early to begin the consideration of concrete plans.

Several courses are theoretically possible, including government acquisition of the railway properties, a continuance of government operation with private ownership under something like the present plan, a return of the railways to their owners as if nothing had happened, and a return to corporate control under somewhat different conditions. The law under which the government is now operating the railways distinctly states that it is "emergency legislation enacted to meet conditions growing out of the war," and that federal control shall continue during the period of the war and for a reasonable time thereafter not exceeding 21 months after the peace proclamation. The President may also relinquish the railroads at any time. Affirmative action by Congress is, therefore, required to prevent the return of the properties to the management of their owners and incidentally to the regulation of sundry commissions and the restrictions of several laws which also have been kept more or less in the background since last December.

There has prevailed a rather general impression, which we believe there has been no official effort to remove, that the present administration has had no expectation of returning the roads to private management, but that it has hoped and expected to demonstrate to the American people that the government can operate the roads more successfully than they could be operated under corporate control. Others have gained the impression that the effort has been not necessarily to demonstrate the superiority of government over

corporate management but to bring about certain reforms and take advantage of the government control for war purposes to conduct a laboratory experiment in unified operation, free from the restrictions of the Sherman law and the harassing influences of state regulation, as an example for the future.

Director General McAdoo has carefully refrained from committing himself as to the future of the railroads, on the very plausible ground that he was too busy with the war to take thought for the morrow, although he did once allow the use of his name on a statement referring to an ambition to "humanize the science of railroading and negative the idea that corporations have no souls." At any rate some of the activities of the Railroad Administration have, in the opinion of many, gone far beyond what could be classed as temporary or war measures.

Director General McAdoo's ideas as to the future, and undoubtedly those of the President, whose authority he is exercising, may be indicated before long by the character of the activities of the Railroad Administration, whether they are principally devoted to a continuance of the process of unification and scrambling or whether they are turned in the direction of the readjustment.

However, what the government and the Railroad Administration may have desired or intended to accomplish may now be of less consequence than what they may be able to accomplish and whatever the plans and purposes may have been, it is quite possible that they may have been changed by circumstances over which the administration had no control. It is generally assumed that the possibility of Congress voting for permanent government ownership, if such a possibility ever existed, has been materially lessened by the election of a Republican majority in both Houses of Congress on November 5. It has often been predicted that the question of the disposition of the railroads might be the big issue at the next presidential election in 1920, but it now seems possible that it will have to be decided, if not before that time, at least before the Congress and the President elected in 1920 take office in March, 1921. It therefore becomes important that attention be given to what the decision shall be.

While the public has been inclined to postpone critical discussion of the results of government control while the nation was engaged in war, we strongly doubt whether it has been convinced that the government has made such a success of railroad operation as to warrant its adoption as a permanent policy. On the other hand, in spite of the handicaps created by war conditions, such as the shortage of labor and materials, it has possessed numerous advantages which the corporations did not have, such as the power to fix rates with some reference to increasing wages and its freedom from regulation, and to return the roads to their owners subject to the former conditions of regulation might be something like subjecting a hot-house plant to the rigors of the weather.

The only definite plan that has attracted general attention, between government ownership or operation on one side and a mere return to former conditions on the other, is that of regional consolidation of railroads under corporate management, but under strong federal control and possibly a government guarantee. Chairman Daniels of the Interstate Commerce Commission outlined some advantages of such a plan in his address before the National Association of Railway and Utilities Commissioners this week. His idea apparently was to retain the advantages derived from the elimination of competition and from a considerable degree of centralization while avoiding the dangers of a single control of the entire railway system of the country. Perhaps some such compromise between the old regime and the new might be acceptable.

Letters to the Editor

An Interesting Record of Earlier Days

NEW YORK, N. Y.

TO THE EDITOR:

The recent death of Augustus Mordecai brings to mind a feat of railroad engineering which in its day was considered a great achievement and in which he participated. That was the change from the 6-ft. gage to the standard of 4 ft. 8½ in. on the old Atlantic & Great Western Railroad, now a part of the Erie system.

The longest day of the year—June 21—in 1880 was selected to change the gage on 280 miles of main track and sidings between Salamanca, N. Y., and Dayton, Ohio. About 1200 trackmen, carefully instructed beforehand and distributed for this special piece of work attacked the track at 4 o'clock in the morning and the last section was completed by 10:30, in 6 1/2 hours, so that the regular express trains from opposite ends were not delayed and met at Galion, Ohio, at 4 p. m. There was no interruption of traffic.

The work had been prepared for about a year. It was excellently organized by Charles Latimer, chief engineer of the road, who died in 1888. He was aided at that time (in 1880) by a staff of young, ambitious engineers, all of whom afterward made their mark. Henry C. Thomson, Arthur M. Wellington, Jonathan Wainwright, Augustus Mordecai and the writer, who is the only one living now. Augustus Mordecai was the only one of that staff that remained on the road and grew up with it through all its different administrations.

He had a real affection for it and when it became an integral part of the Erie system it was appropriate that he should become its chief engineer in the line of promotion.

GUSTAV LINDENTHAL,
Consulting Engineer.

Compensation for Railway Officers

NEW YORK.

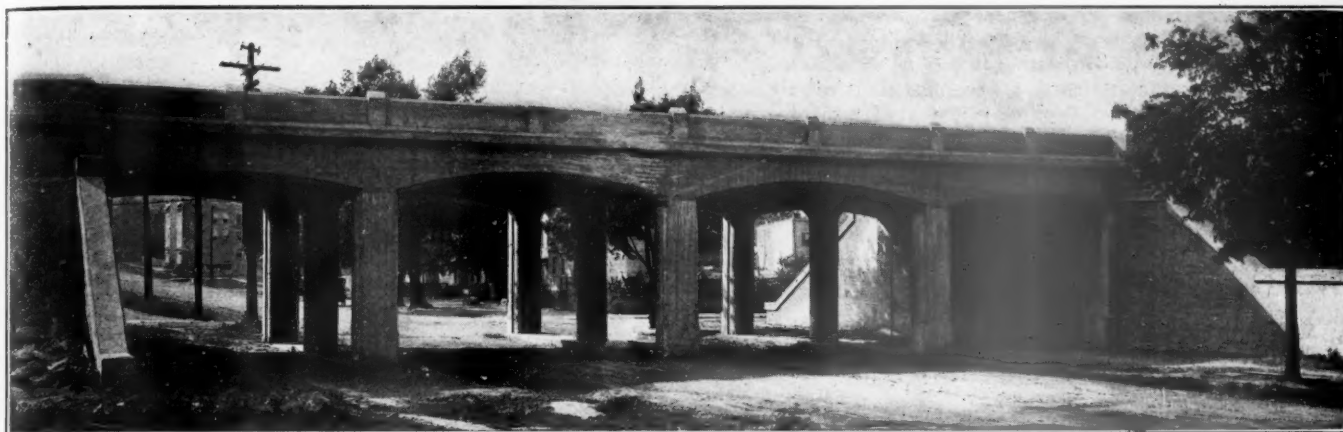
TO THE EDITOR:

I notice on the editorial page of the August 23 issue of the *Railway Age* an article entitled "Compensation for Railway Officers".

I am glad to see someone, after all these years, come out and back up this class of railroad men who are so notoriously underpaid.

As far back as 1901 I knew cases of trainmasters and division engineers on some of the big trunk lines who were drawing salaries of \$150 to \$175 per month, while locomotive engineers made from \$225 to \$250. In these cases the officials mentioned were subject to call any hour of the twenty-four; trainmen under the sixteen-hour law were required to be given eight hours' rest. I have been to train wrecks and wash-outs where officials have been on duty for 72 hours without sleep and train crews were relieved regularly at the end of the time required by the law. It seems to me that the railroad officers should at least get as much money as the men who report to them. I know of one case at the present time of a division engineer on one of the big trunk lines in the Middle West, who after 18 years of service, is now drawing the magnificent salary of \$2,000 per year and trainmasters are paid \$175 per month, i. e., unless the Railroad Administration has taken them into consideration in the recent advance of wages to railroad men.

SUPPLYMAN.



Central Avenue Bridge Showing the Recessed Abutments and the Manner of Supporting the Ends of the Slab

Lackawanna Improvements in Orange, N. J.

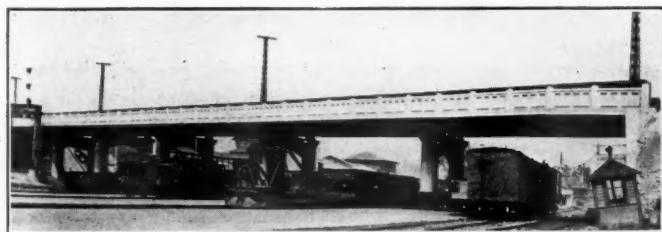
A Very Heavy Traffic and Adverse Physical Conditions
Contributed to the Difficulties of Construction

THE DELAWARE, LACKAWANNA & WESTERN is now completing an interesting grade separation project through Orange, N. J., which involves the elimination of 26 crossings at grade with the tracks, the replacement of the two-track portion of the old line within the limits of the improvement with three tracks built largely on an improved alignment, and the enlargement of the freight and passenger facilities. Work on this project was begun in May, 1916, and is now complete except for minor details. About 382,000 cubic yards of filling were placed in making the embankment necessary for the raise of the grade: 43,000

the present work on the east, to complete the entire improvement. This will involve the elimination of 14 grade crossings.

Work Carried On Under Difficult Conditions

The Orange section of the improvement, with which this article is concerned, embraces 2.25 miles of line and extends from the boundary between East Orange and Orange on the east, west to the east end of the recent improvement through South Orange. The unimproved line through Orange had two tracks east of Forest street and three tracks west of the point. The alignment west of Orange station involved a five-degree curve, and the line occupied an unsatisfactory location along Scotland street where the tracks closely adjoined the street driveway. There were no large industries to be served by sidings within the limits of the improvement, but it was necessary during construction to maintain service to seven coal yards, a branch depot of Swift & Company,

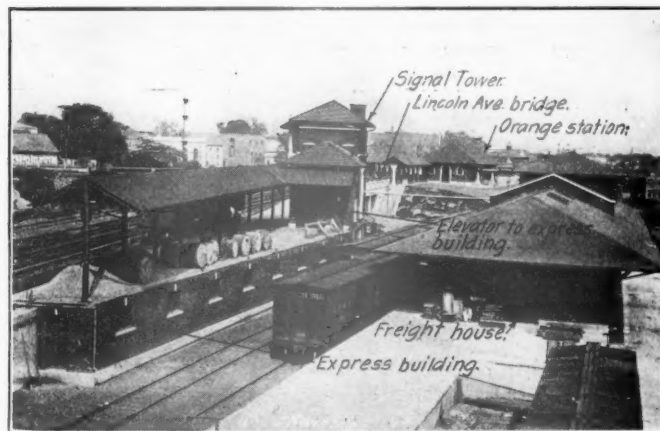


Overhead Highway Bridge at Scotland Street

cu. yd. of concrete were required in the retaining walls and station foundations, and 30,000 cu. yd. of concrete were placed in the bridges and trestles where 625 tons of structural steel and 800 tons of reinforcing steel were also required.

This project is a part of an extensive program of reconstruction on the Morristown line of the Lackawanna, which includes the renewal of stations and the elimination of all grade crossings. This line constitutes one of the two approaches to Hoboken, the eastern terminal of the road. It extends west from that terminal through the most highly developed residential section of New Jersey within commuting distance of New York City, and for this reason the line has been developed especially for suburban traffic, although a number of local freight trains and four through passenger trains are operated over it daily.

The improvement of the Morristown line has been under way for years. An account of the changes made at South Orange appeared in the *Railway Age Gazette* of March 24, 1916. With the completion of the work in Orange there remains only the section through East Orange, which adjoins



Layout at Orange Station

an ice plant, a brewery and for several small lumber dealers.

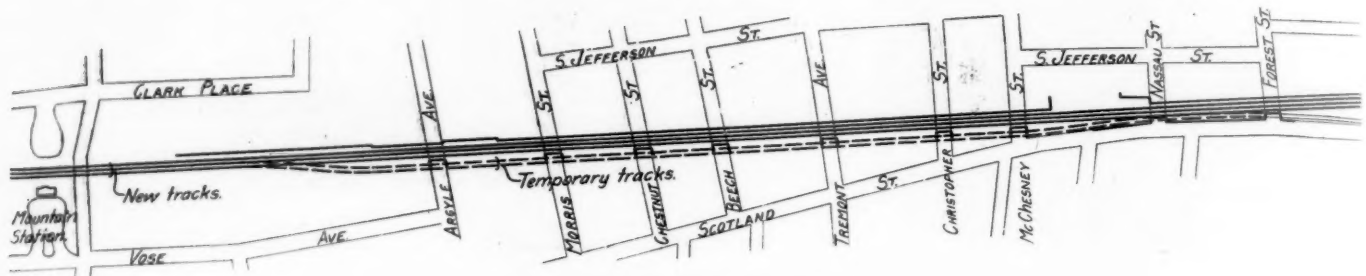
The district included within the limits of the improvement is a populous section, and the right of way is limited in width. There were 140 train movements to be handled daily over the improvement, consisting of the local freight and the four through passenger trains mentioned above, and the suburban traffic. The suburban train equipment is of the

heaviest type, the trains in the rush hours, for the most part, being made up of 8 to 10 steel cars each.

The plans for the improvement contemplated the elimination of the 26 grade crossings; the replacement of the original tracks with a three-track line throughout the entire

the best development of the temporary tracks and a temporary station was built.

The freight and express business of the two stations in Orange and the three in East Orange is all handled at Orange station, and the freight house and yard had long



West End of the Improvement

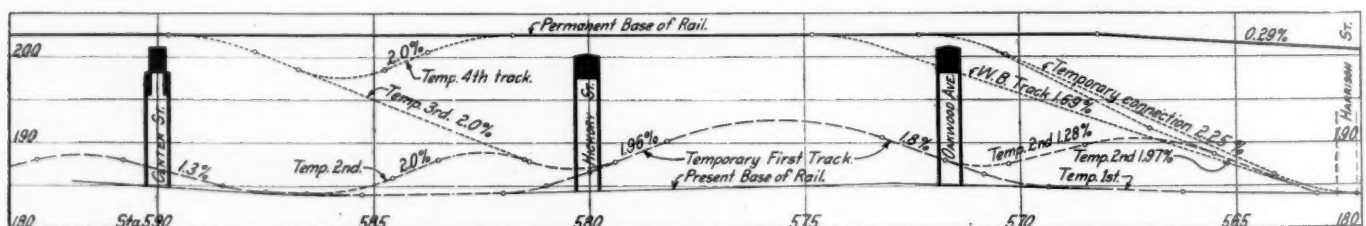
district, the third track to be used as an express track New York bound in the morning and outbound in the evening; and the improvement of the alinement west of Orange station by extending the tangent at the west end of the improvement to an intersection with the tangent on the east end, and connecting them by a 2-deg. curve compounded with a 2-deg. 52-min. curve. This shift in alinement extends over nearly one-third the total length of the improvement and the change simplified the construction, in that eight of the bridges and one-third of the line could be constructed without interference with traffic. It also improved Scotland street, as the old location was abandoned in that vicinity. The plans also provided for the enlargement of passenger and freight facilities, improved layouts for the coal dealers and other shippers along the line, and, most important of all, the elevation of the tracks to a new grade throughout the entire improvement.

The carrying out of this construction program under the conditions outlined above presented several special problems. The limited right of way available made the construction of the temporary tracks necessary for operation during construction a difficult matter. All these tracks for shifting the alinement had to be made substantial to carry the heavy suburban equipment as well as the heavy freight traffic

ago outgrown their capacities. The freight layout was crowded in the area of greatest activity between Essex avenue and Lincoln avenue, where both vehicular and pedestrian traffic was very heavy to and from the temporary station. The handling of the freight business during construction was another important problem. How this and other problems were met will be described in the sequence of construction.

Grade and Alinement Changes

In planning the improvement it was found to be desirable to elevate the tracks rather than the streets, and with the exception of Scotland street, all the streets were carried under the tracks in subways. The profile was determined by a 12-ft. 6-in. vertical clearance over the streets, except at the west end of the improvement where the height of the grade line was controlled by the connecting grade with the recent improvements through South Orange. At this point a 1.3 per cent ascending grade was installed, beginning at the east face of the Montrose avenue overhead highway arch at Mountain station. This grade was continued east until the desired clearance over streets was obtained. The first five streets under the 1.3 per cent grade were depressed to give the 12-ft. 6-in. under clearance, and at Cone street



Profiles of Temporary Track Shifts East of Center Street

of the Boonton branch in the event of a blockade on that line. The necessity for maintaining street traffic across the improvement also complicated the construction plan. The city authorities gave their co-operation in this regard, permitting the closing of streets wherever necessary to conform with plans favorable to the simplest and most expedient methods of operation and the construction of the temporary tracks necessary to maintain traffic.

In planning the enlargement of passenger station facilities it was necessary to move both stations to blocks adjoining their old locations, where the additional property necessary was more easily available. At Highland avenue this arrangement permitted keeping the old station in service during the construction of the new one, but at Orange station the building was on the wrong side of the tracks for

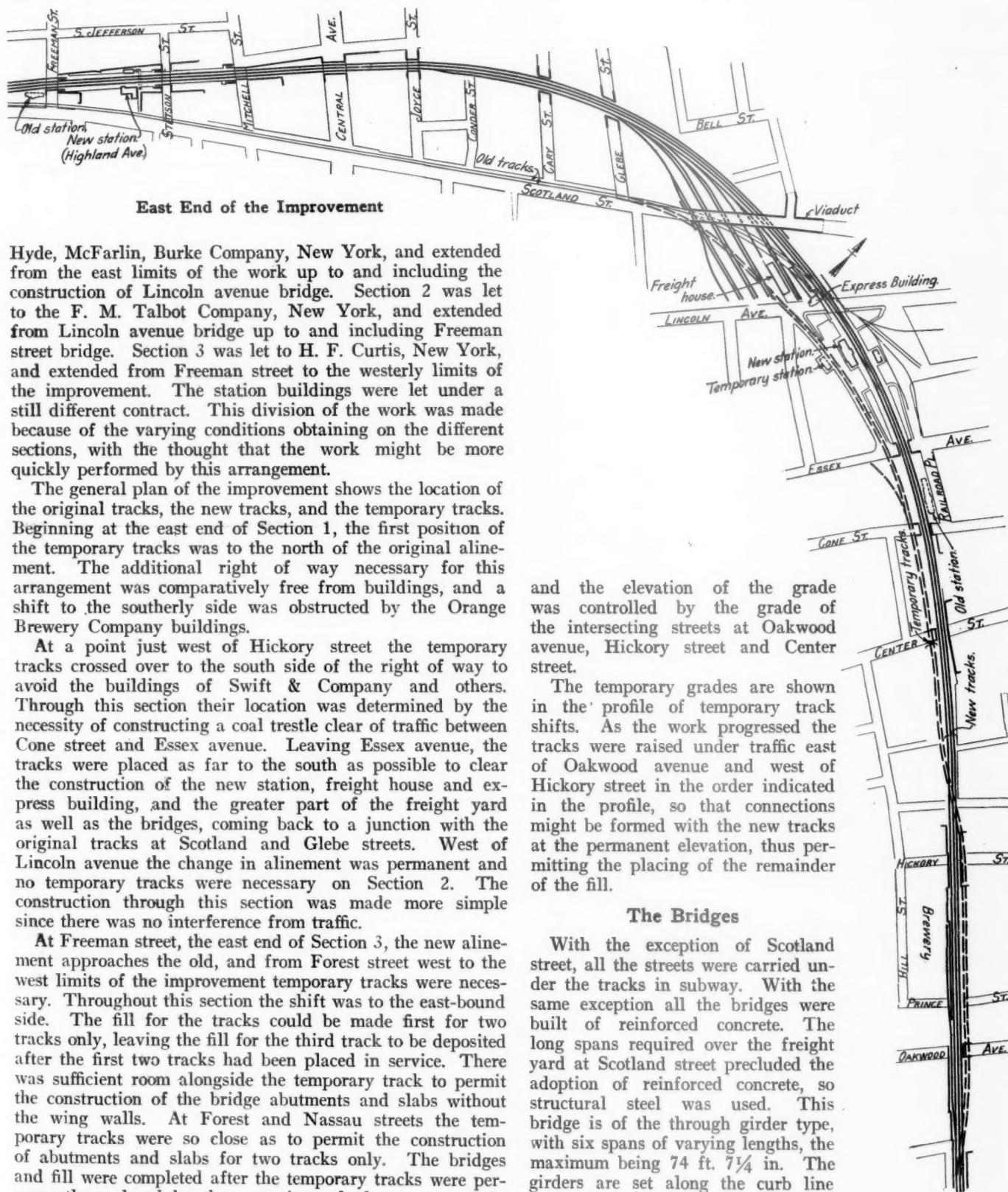
where a 13-ft. 6-in. clearance was necessary because of a trolley line, the street was depressed for the additional clearance. The grade installed at the east end of the improvement is temporary and will be changed when the proposed improvements through East Orange are made.

The change in grade involved embankments containing 382,000 cu. yd. of fill. Approximately 68,200 cu. yd. of the material was secured from the cut necessary to bring the new freight yard site to the proper level, and the remaining 313,800 cu. yd. was hauled from Madison, N. J., a distance of 14 miles, where it was obtained by widening a big cut opened in a recent improvement through that section. The material secured at Madison was loaded by steam shovel, hauled by work trains to Orange, and unloaded by the contractors from temporary trestles. The 68,000 cu. yd.

secured at the freight yard was moved to place over a narrow-gage track and trestle.

The construction work was divided into three sections, each section being let under a separate contract and to a different contractor. The first section was awarded to the

construction of the embankment at the permanent grade. Through this section the limited right of way and the necessity of shifting the temporary tracks from the north to the south of the center line prevented the construction of the temporary tracks clear of the slopes of the new embankment



East End of the Improvement

Hyde, McFarlin, Burke Company, New York, and extended from the east limits of the work up to and including the construction of Lincoln avenue bridge. Section 2 was let to the F. M. Talbot Company, New York, and extended from Lincoln avenue bridge up to and including Freeman street bridge. Section 3 was let to H. F. Curtis, New York, and extended from Freeman street to the westerly limits of the improvement. The station buildings were let under a still different contract. This division of the work was made because of the varying conditions obtaining on the different sections, with the thought that the work might be more quickly performed by this arrangement.

The general plan of the improvement shows the location of the original tracks, the new tracks, and the temporary tracks. Beginning at the east end of Section 1, the first position of the temporary tracks was to the north of the original alignment. The additional right of way necessary for this arrangement was comparatively free from buildings, and a shift to the southerly side was obstructed by the Orange Brewery Company buildings.

At a point just west of Hickory street the temporary tracks crossed over to the south side of the right of way to avoid the buildings of Swift & Company and others. Through this section their location was determined by the necessity of constructing a coal trestle clear of traffic between Cone street and Essex avenue. Leaving Essex avenue, the tracks were placed as far to the south as possible to clear the construction of the new station, freight house and express building, and the greater part of the freight yard as well as the bridges, coming back to a junction with the original tracks at Scotland and Glebe streets. West of Lincoln avenue the change in alignment was permanent and no temporary tracks were necessary on Section 2. The construction through this section was made more simple since there was no interference from traffic.

At Freeman street, the east end of Section 3, the new alignment approaches the old, and from Forest street west to the west limits of the improvement temporary tracks were necessary. Throughout this section the shift was to the east-bound side. The fill for the tracks could be made first for two tracks only, leaving the fill for the third track to be deposited after the first two tracks had been placed in service. There was sufficient room alongside the temporary track to permit the construction of the bridge abutments and slabs without the wing walls. At Forest and Nassau streets the temporary tracks were so close as to permit the construction of abutments and slabs for two tracks only. The bridges and fill were completed after the temporary tracks were permanently replaced by the operating of the two westerly tracks on the finished embankment.

On Section 1 it was necessary to change the grade of the temporary tracks from time to time in conjunction with the

and the elevation of the grade was controlled by the grade of the intersecting streets at Oakwood avenue, Hickory street and Center street.

The temporary grades are shown in the profile of temporary track shifts. As the work progressed the tracks were raised under traffic east of Oakwood avenue and west of Hickory street in the order indicated in the profile, so that connections might be formed with the new tracks at the permanent elevation, thus permitting the placing of the remainder of the fill.

The Bridges

With the exception of Scotland street, all the streets were carried under the tracks in subway. With the same exception all the bridges were built of reinforced concrete. The long spans required over the freight yard at Scotland street precluded the adoption of reinforced concrete, so structural steel was used. This bridge is of the through girder type, with six spans of varying lengths, the maximum being 74 ft. 7¼ in. The girders are set along the curb line 31 ft. apart, with two sidewalks 9 ft. wide carried on cantilever brackets. The structural steel brackets and floor beams are encased in concrete and support reinforced concrete slabs. The railing is made of concrete

and is composed of precast panels with the posts cast in place after the panels had been set. The superstructure is supported on reinforced concrete piers.

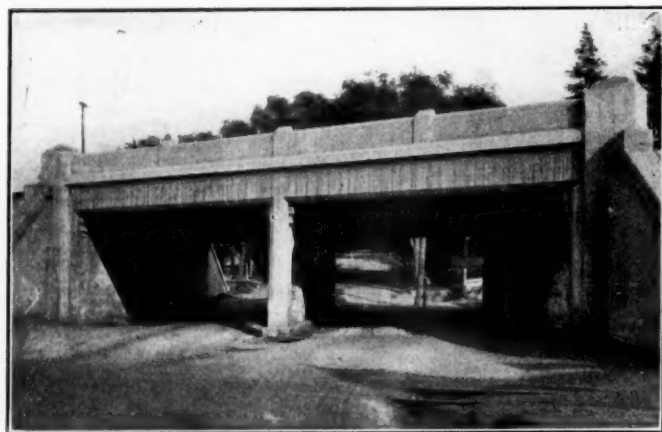
Most of the streets included in the improvement are 50 ft. wide, and as slab top reinforced concrete bridges with center pier supports dividing the street into the two clear openings of 24 ft. were well adapted to the width of the streets, this type was generally used in the subways. The reinforcement of the slabs is placed normal to the axis of the center pier, even in bridges built on a skew. The parapets of these structures are built integral with the slabs and are reinforced for girder action to carry the triangular loading on the slab adjacent to the parapet.

The piers are made up of a series of 10-ft. elliptical arches separated by columns about 4 ft. in width. These columns are supported on a continuous footing, which is an inverted T-beam in section, the stem of which projects 8 in. above the crown of the roadway to form a curb and protection to the columns. A chamfer 6 in. wide on all exposed edges of the pier and carried along the face of the bridge produces a pleasing effect.

At Essex and Lincoln avenues, adjacent to the station, the street width is 60 ft. Here, in addition to the pier in the center of the street, piers were placed along the curb lines, effecting a reduction of span.

In Section 2 the surface of the ground along the changed alignment was considerably lower than the existing crossings on Section 3, which determined the profile of the tracks. The greater vertical clearance prevailing made possible the use of three flat segmental arches spanning the full width of the streets at Joyce, Mitchel and Stetson streets instead of the multiple span flat top structures. The abutment quantities of the arch type were very small because of the low springing line placed 7 ft. above the sidewalk. The arch type had a slight advantage in cost over the high flat top. The 12-ft. 6-in. clearance at the curb line was maintained in these bridges.

An interesting development resulted in the design of the



This Type of Bridge Was Used Extensively at 50 ft. Streets

bridges over Cone and Center streets. A trolley line in the center of the former and a 5-ft. sewer in the latter prevented center piers in these streets. A shallow floor depth was maintained for the 30 ft. clear span from curb to curb by using 30-in. 200-lb Bethlehem girder beams. These were entirely encased in concrete to conform in appearance with the other structures. A lower bearing sub-soil was encountered at these bridges than elsewhere, and as the foundation pressures would not exceed a maximum of three tons per square foot, a reinforced concrete box abutment was developed which effected a considerable saving compared with a gravity abutment. The same arch pier effect previously

described was given to the wall of the box along the curb line of the street.

The bridge over Central avenue is an innovation in the design and construction of the small type railway bridge. This is a four-way, reinforced, flat-slab bridge. Columns on the curb and along the center line of the street divide the deck, which is two feet in thickness, into eight rectangular panels, two in the width and four in the length of the bridge. The ends of the slabs are also supported on columns set in recesses built in the abutments. The slab is cantilevered beyond the abutment and is entirely independent of it. A suspended beam or apron is built integral with the slab to prevent the back-fill and drainage from per-



Coal Trestle with Shed

colating through the horizontal joints. The abutments take no slab reaction and are, in effect, retaining walls. It was possible to reduce the section for the reason that the suspended apron reduces the live and dead load surcharge pressure against the back of the wall, thus effecting an appreciable saving over the massive abutments required in support of structural steel bridges, where the bridge seat is a source of much trouble on account of the collection of water, snow and ice on its wide surface. Reinforcing steel was placed in the curb to provide a tie between the columns and footing of this bridge, insuring a greater degree of fixedness in the column and slab connection. In addition to the improved appearance, the arch parapet face adds greater stiffness to the edge of the slab and columns. The parapet including the coping was built with the slab and substantially reinforced. The panels of the concrete balustrade were precast. The posts were cast in place.

Bridges of the types described above were built at 23 of the 26 intersecting streets within the limits of the improvement, the three remaining streets being closed across the right of way. All bridge decks were waterproofed with two plies of Minwax saturated cotton cloth laid in and covered with hot asphalt. Two $\frac{3}{4}$ -in. layers of asphaltic mastic protect the membrane from injury by the ballast. Before applying the mastic the membrane was covered by asbestos paper to prevent fusion of the mastic with the higher grade asphalt covering the cloth. The waterproofing and protection coat is carried in a reglet up the back of the parapet wall to the base of rail and down over the ends of the slab to an offset in the back of the abutment two feet below the construction joint between the slab and the top of the abutment.

Reinforced Concrete Coal Trestles

Within the limits of the improvements were seven coal yards, and with the change in grade of the main tracks it was necessary to provide new facilities for them. The usual type of open trestle, expanded in design to serve as a retaining wall, which would have been necessary to support

the embankment had there been no demand for a trestle, was adopted. The foundations for these trestles differ to meet the varying conditions. Several of them support sheds over the tracks; others are without shed; several dealers plan to build bins between piers with hopper bottoms for discharge directly into wagons. Where no shed is provided, the piers are 10 ft. wide, and on the far side a wooden platform and railings are cantilevered from the piers. The trestle shown in the illustration supports a shed.

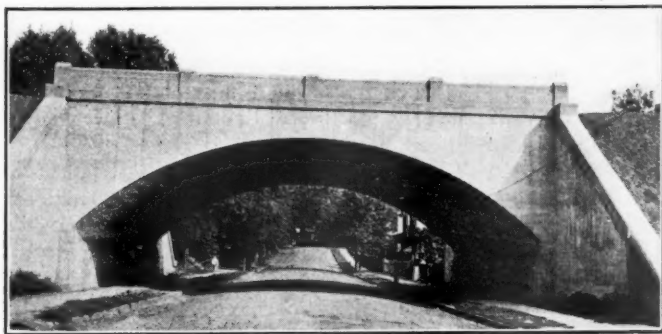
The piers are not reinforced and are used as buttresses, bracing a two-foot curtain wall. The footing under this wall is extended to provide the additional weight necessary to balance the overturning and sliding movements in sup-



Type of Bridge Used Where Center Supports Were Impractical—A 30 ft. Span I-Beam Encasement

porting the embankment. The sections are tied together to make the entire mass effective. The outline of the foundations in plan, while varied as described above, is a series of T-sections so proportioned that under maximum loading the resulting pressure is very nearly uniform. The track stringers are reinforced concrete beams with removable track fastenings extending clear through the beams. This type of fastening has been found very satisfactory.

Provision has been made throughout the improvement for carrying the wiring in a battery of 4-in. fiber ducts set in concrete. These ducts are carried across the bridges, in retaining walls where they exist and in the fill where there



Arch of 51 ft. Span at Joyce Street

are no walls. Nine ducts are for low tension wires, three for signal work, three for Western Union wires, one for company telephones and two are spare. Six ducts are provided for future high tension wires, one being used at present for the wires of the lighting system.

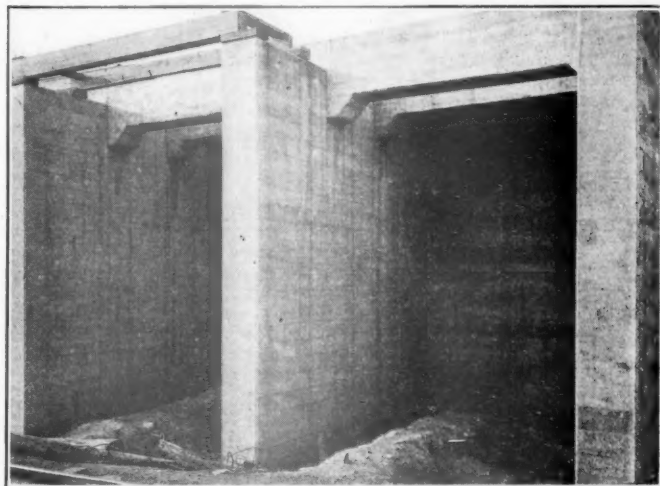
In the embankments the ducts were set in concrete below the shoulder of the embankment after it had settled. The cross-section of the bridge slab shows the method of carrying the ducts across the bridges. The slab and duct were built in separate operations. The dovetail joints between them are insulated by waterproofing membrane to prevent a possible electrolytic action by stray currents following the reinforcing steel of the slab. This insulation is carried over the top of the duct and covered with three inches of concrete.

The Passenger and Freight Facilities

The most important of the station improvements was made at Orange station. This layout includes the passenger station, the shelter house, the freight house, express building and a signal tower grouped in a comparatively small area. The old site for these facilities was cramped by the improved property adjoining it. This applies particularly to the approaches, and it was impossible to reach the site with freedom. For this reason a new location was chosen at the point where the new line departs from the old, permitting ample driveways to be developed at the station level.

The passenger station and shelter house are of the Byzantine type of architecture with exterior walls of dark red wire cut brick laid in flemish bond and trimmed with artificial stone. The roof is of glazed tile. The interior walls of the main waiting room are laid up with pressed brick above a sanitary marble base. From the bottom up to the springing line of the arches, at which line there is a belt course, the brick is laid up in a special diaper pattern. Above the belt course they are laid in flemish bond.

The floors in the station are terrazzo, broken into panels by strips of mosaic. Ceiling lights are used for general



A Section of Coal Trestle Almost Completed

lighting. The seat lights are of the reading lamp type and bracket lights serving the same purpose are provided over the seats along the walls.

The main waiting room is 30 feet by 65 feet in area, with a central ticket office, built in as a booth, with a bay window provided on the track side. The retiring room for women and the smoking room, together with toilets for each, are located in the east end of the building and the baggage room, news stand and telephone booths at the west end. The entrance to the baggage room from the waiting room is between the news stand and telephones.

A subway connects the main station and shelter house. This subway is lighted with vault lights placed in the platforms instead of between tracks, an arrangement which is very satisfactory, as the walking on them keeps the lights clean. A mixture of alundum in the top half inch surface finish of the stairs forms a safety tread. This surface is placed on a concrete base.

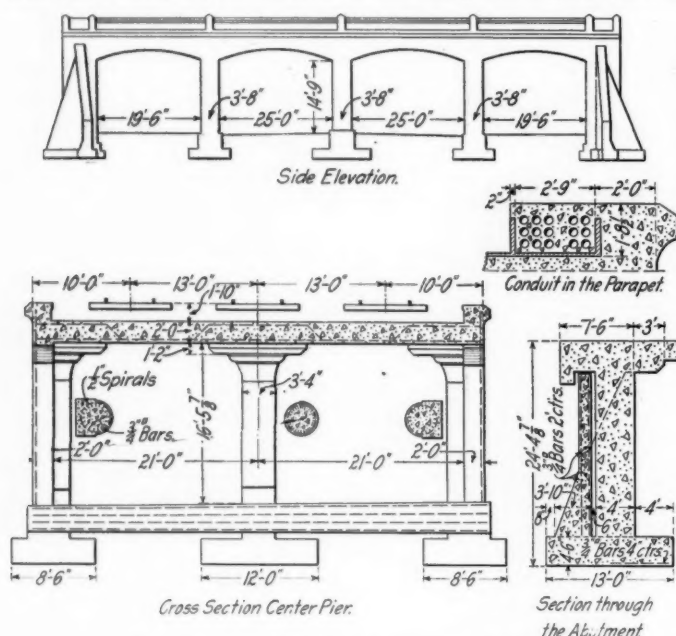
The platforms, about 700 feet long, are partly covered with canopies built on concrete columns with timber overhead construction and tile roofs. The platforms end in stairs leading to the streets.

The freight house, 33 by 210 ft., the express building 20 ft. by 345 ft., and the signal tower are all designed in keeping with the main station building. The old freight

facilities were badly distributed on both sides of the main tracks. In the new layout they have been centralized and ample driveways paved with concrete have been provided. This was accomplished by locating the new plant just west of Lincoln avenue between the old and the new right of way at the point of their separation. By this arrangement much of the old right of way could be utilized.

The surface of the ground at the site chosen was considerably higher than the grade of Lincoln avenue, which has been made the principal thoroughfare to the station, freight and express buildings. In preparing the site 68,200 cubic yards of earth was moved and utilized in the track embankment.

The handling of the freight business during construction was a problem in itself. The portion of the yard on the north side of the tracks was kept in operation by a switch track, leaving the westbound temporary track with a trailing point switch opposite the temporary passenger station. This switch track was connected with the lead track of the old freight yard and during the construction of Lincoln avenue bridge this connecting track was carried across the depression of the street to the north of the bridge on a pile trestle.



Details of the Central Avenue Subway

The express building is located adjacent to the freight yard and the retaining wall, starting from the west abutment of Lincoln avenue bridge. This wall forms the inner wall of the building, and the continuation of the station platform over Lincoln avenue forms the roof. The signal tower is also an integral part of the platform construction and space is provided in it for an elevator to handle express between the platform and the ground floor of the express building.

The signal tower is a three-story building extending down into the express building. The heating plant for the entire layout is located in the basement of the tower. The plant is of the combined pressure and vacuum type designed for a 5-lb. pressure in severe weather. Once the air is expelled from the system no pressure is necessary for heating in mild weather, thus effecting more than 25 per cent saving in coal as compared with an ordinary plant. The piping system is of the flat layout type. There is, however, sufficient grade to carry the return back to the boilers.

The station layout at Highland avenue is similar to the above, but smaller. A simple heating plant in the basement furnishes the heat for the station and shelter house.

The design and construction of this improvement was carried out under the general direction of G. J. Ray, chief engineer of the Lackawanna. The design of the buildings was directed by F. J. Nies, architect, and of structural steel by A. E. Deal, bridge engineer. A. B. Cohen, concrete engineer, was in charge of the concrete design. G. T. Hand, division engineer, supervised the construction with W. H. Speirs, resident engineer, in direct charge of the work.

With an American Railway Regiment

THE FOLLOWING is a portion of a letter received by J. F. Holden, traffic manager of the Kansas City Southern, from his son James, who is now a private in the 14th Engineers (Railways) in France. The company of which he and his brother are members was with the British for eight months in northern France. The young men escaped with their lives in the German drive of March 21, when the company retired to a base point. Recently they re-entered the war zone at another point, and the letter is descriptive of their trip back to the front:

The troop trains over here remind me of the circus trains at home, so many cars for the animals, including men, as they are put in with the horses, a string of flat cars for trucks and wagons, then another string of "animal" cars with a couple of passenger cars for the officers. It was on such a train that we left — on August —. We have no horses in our regiment so with clean, new straw which they have at embarking points for such purposes, the men made themselves comfortable. I was in a cupola. There are no air brakes on the freight trains over here but every third or fourth car has a hand brake with protection for the man who applies it. There is always such a car at the rear of a train. The other cars simply have a lever on the side, which when pushed down holds a brake shoe against the wheel for the purpose of holding cars when standing on sidings. We had a British engine, a big Consolidation with "R O D" on the tank, R O D meaning Railway Operating Division. The British have great numbers of these engines on all lines in the north of France, including a large number of American and Canadian built that make one homesick when they go by. The road trains usually have a French train crew, the idea being, I suppose, that an English crew would be up against it sometimes on a French railroad. Switching or transfer jobs, of course, have a complete "Tommy" crew. I have seen some tremendous yards.

Our trip, which took a day and night, was most interesting. At one station we saw a whole row of bomb holes where some Fritz had tried to hit the railroad, including an important bridge. There was a great deal of construction work in progress. We passed trains constantly and when one with Americans went by, there would be cheering. As you no doubt know, American detachments are in with British battalions; so there would usually be a car or two with just Yanks in it.

We lost our R O D engine in the afternoon and got a big French engine with high drivers, which is typical of their locomotives. Most are balanced compound. The country became hilly and we had a pusher for miles. It was necessary for the train to stop in order to feed the men but until dark there was no let-up in the going. I dropped off to sleep in a corner and awakened about two hours later with the train standing and a regular air raid overhead. The searchlights were sweeping the sky right over us, the tracer bullets were going in the same direction and there seemed to be guns all around. We were in a yard at the time and of course Fritz likes yards. The cooks, who were in the next car, had seized the opportunity of feeding the men whose greatest concern at the time was not about the raid but some-

thing to eat. As the train might start any moment, it was necessary to do a lot of running up and down along the train to see that everyone was fed. No one seemed to have a thought for the raid. In our old camp, I have seen a bunch playing poker and not quitting for a second with bombs dropping all around. Must admit my nerves are a little too excitable to take such an indifferent view of an air raid.

The next morning we awakened in a yard on the outskirts of Paris. Commuters' trains were going by in a peculiar type of car, an enclosed double decker with four wheels. An engine could pull twenty or thirty at a great rate. It was raining hard. We pulled out for the front about nine. We went by some beautiful homes and attractive towns, suburbs of Paris. The line was a busy one with the trains rushing by. War seemed very far away and yet in a couple of hours at a slow gait we would be right into it. Imagine an enemy at Bridgeport, Conn., trying to reach New York; the suburban traffic of New Rochelle and other such places is still going, and as you take the "7:51" to town you pass troop trains on their way to Bridgeport to help hold the line. The trains passing—as we were coming out of Paris—with the people reading their papers as at home, put in mind such a

simile and gave me an idea how anxious Frenchmen have felt over the defense of Paris.

We came out of a tunnel and crossed the Marne and there on the bank was a "dough boy" washing up. The Marne and the American soldier will always associate themselves in my mind, because the Marne is the place where the Yanks, through their wonderful fighting, stopped the Germans and drove 'em back. The country became more interesting with signs of war. Shell holes, wires down, villages shot up—but not to the extent we had become used to up in the British front. As we passed the stations we saw more and more of the American army. At one place were numerous brand new guns, tractors, trucks, with every one busy getting them unloaded and working. The sight of American soldiers certainly looked good after one year of nothing but British. When one lad at a station told us what outfit he belonged to, the ——— Artillery, and how they had been ordered up to help take a position, and when half way there, had received word to turn back as they were not needed, the position having been taken, it was hard for me to suppress an individual cheer of my own. We soon reached our destination, were billeted and two days later left for our present home.

Federal and State Commissioners in Convention

Termination of War Removes Some Restraint on Discussion of Railroad Administration Policies

THE THIRTIETH ANNUAL CONVENTION of the National Association of Railway and Utilities Commissioners began its sessions on November 12 at Washington. At the opening of the convention the Interstate Commerce Commission and 25 state commissions were represented, the total number of delegates being more than one hundred. Winthrop M. Daniels, chairman of the Interstate Commerce Commission, delivered the address of welcome, the Executive Committee presented its report and Charles E. Elmquist, of Minnesota, acting president of the association, delivered the annual address.

The association has 18 standing committees and each was scheduled to present a report. The first on the order of business was the report of the Special War Committee, which was presented by its chairman, Joseph B. Eastman, of Massachusetts. The other members of this committee are Frank H. Funk of Illinois, Travis H. Whitney, first district, New York, Paul P. Haynes of Indiana, C. B. Garnett of Virginia and Charles E. Elmquist of Minnesota.

William G. McAdoo, director general of railroads, was expected to address the convention, but, owing to a recurrence of an attack of influenza, sent in his stead Charles A. Prouty, director of public service and accounting of the Railroad Administration.

The status of the state commissions during federal control and of the railroads after the war apparently were the subjects uppermost in the minds of those present, and the fact that the war is now regarded as over seemed to present an opportunity for a freer discussion than has heretofore been considered advisable or patriotic. This fact was particularly emphasized in Mr. Elmquist's address and in the report of the Special War Committee, both of which deplored the lack of interest displayed by the Railroad Administration in the offers of co-operation of the state commissioners and the tendency, which they ascribed to the railroad men in Director General McAdoo's organization, to ignore the jurisdiction of the states.

Mr. Elmquist said the representatives of the carriers had

rallied under the banner of exclusive federal control and were following the plans outlined by the railroads before the Newlands Committee to such an extent that they had "cracked the boundaries of states and scrambled both state and interstate rates in one omelet." The state commissions, he said, had taken the position that they should not resort to litigation to protect their prerogatives during the war, but now they should proceed to exercise their authority and to continue the activities they have largely suspended during the war. He urged the committees to give special consideration to the proposals of the administration to standardize class freight rates, the proposal to increase express rates and the future disposition of the railways. On this last point he said he did not believe there is a friend of public ownership in the country who thinks government operation has had a fair chance to demonstrate its possibilities. He hoped the convention would adopt a resolution asking the Interstate Commerce Commission to suspend the class rate scales until peace is restored and people have had an opportunity to adjust their business affairs, and that the Railroad Administration would give early consideration to the possibility of reducing the rates it recently increased.

An abstract of Chairman Daniels' address follows:

Chairman Daniels' Address

No other year in our history has recorded so fundamental a revolution in our transportation system as the year just elapsed. So numerous and far-reaching have been the changes involved in federal control of carriers that it is perplexing to single out a particular topic upon which to dwell. The war railroad problem—the maximum utilization of transportation systems to subserve the government's military necessities—seems to have been solved. The eventual status of railroad control and regulation, now that peace is at the door, is so complicated and intricate that I shall content myself with but a few general observations thereon at the close. In this situation it has occurred to me that it might be helpful to the national association if I confine myself

mainly to indicating the causes which led up to federal control, and to outlining the way in which, to date, federal control has affected the functioning and the activities of the Interstate Commerce Commission.

It may come as a surprise to those whose wish is father to their thought to learn that the commission's activities have persisted through this troublous time. They should rest assured, however, that—as Mark Twain once remarked of his own rumored demise—the report of our death is grossly exaggerated.

I. First, as to the transition to federal control.

The work of the commission has traditionally not involved actual participation in railway management. The only exception of moment has been in the domain of locomotive and safety appliance inspection. We have more than once disclaimed the role of general manager of railways. But the exigencies of war-time transportation would not permit our standing wholly aloof. As early as March, 1916, the freight congestion at eastern seaboard terminals became so acute that the commission deputed to Commissioner Clark the task of meeting railroad executives in New York to organize relief; and until the dissolution at the end of May, 1916, of the organization then effected, he served as a member ex-officio, but in active participation in its work. Commissioner McChord at a later period when car supply problems became acute undertook at Louisville a similar task. In our annual report to Congress in the fall of 1916, the commission recommended that it be vested with power to control the supply, distribution, interchange and return of cars. Responsive to this suggestion the Esch car service act was enacted in May, 1917. A new bureau of the commission, that of car service, was created; and in collaboration with a joint committee of the carriers exerted wide regulatory powers in the actual distribution of car equipment. While the carriers' executives were in control of operation generally, the commission was thus simultaneously charged with a task of actual railway management in the matter of car distribution. Similar functions had devolved upon other governmental bureaus. The priority director, for instance, had been entrusted with the control of the issuance of priority orders; and the requirements of the food administrator as to car loading, and of the fuel administrator in relation to coal movements, threatened to precipitate a situation of divided power and responsibility in railroad administration.

The carriers, despite what co-operative measures they had united in, were still operating in competition with each other. Rather than forego remunerative traffic they chose to see their own rails overtaxed and their jealously guarded terminals congested. The law itself which forbade the pooling of traffic was an obstacle to the maximum fluidity of movement. In short, the operating situation was grave, and war exigencies were acute.

There was another equally threatening situation connected with rates and railway finances. And this leads me to observe parenthetically that neither the law nor the theory of utility regulation had ever addressed itself to a condition where unit costs for labor, material and supplies advance sharply and continuously by a series of rapid shocks, each seemingly more radical than its predecessor. The general principles of utility regulation have assumed that increases or decreases in unit costs for labor and supplies will proceed in a fairly gradual and leisurely manner; that a compensatory movement might be anticipated whereby slight rises in certain unit prices would be offset by corresponding decreases in other unit prices; and where even a gradual increase in all unit prices would be in a large degree or even wholly offset by the economies attendant upon a larger volume of business or traffic. It is unnecessary to say that in time of war these assumptions broke down completely.

Moreover, the normal rates of return, whether in the form of interest on bonds, or dividends on new investments, were

largely revolutionized by war conditions, when the government was in the market for enormous amounts of capital for war loans, and when the profits in many war industries were reputed to be extraordinarily large. If rates were to keep pace with ever-rising costs, not only would their level have to be unusually high, but continuously rising and absolutely unstable. Moreover, it was doubtful whether rates could be raised high enough so that prospective earnings would attract sufficient additional investment to carrier securities to guarantee the necessary and indispensable additions, extensions and betterments made imperative by war exigencies. Both on operative and on financial grounds some drastic reorganization was inevitable.

In December, 1917, the commission formulated and sent to Congress a special report supplementing its annual report. We there insisted upon the unification of carrier operation during the war.

Federal control became a fact by virtue of the President's proclamation of December 26, 1917. While the railroads were to remain subject to all existing statutes and orders of the Interstate Commerce Commission and to all statutes and orders of regulating commissions of the various states in which they were situated, any order, general or special, made by the director general was to have paramount authority and to be obeyed as such.

II. The colossal magnitude of the director general's task, no less than the war emergency which had created it, rendered imperative on the commission's part a prompt offer to the Railroad Administration of any assistance that lay in our power. This tender was promptly and cordially accepted by the director general, and for some weeks after the beginning of federal control, the individual commissioners, in addition to their regular work, were engaged in prosecuting various investigations at his request. (a) This first phase of our activity as shaped by federal control was one of individual, unofficial, volunteer co-operation with the director general and his railroad cabinet.

I will not venture upon a comprehensive enumeration of the various undertakings by my colleagues in this early formative period, but will cite a few illustrative examples. Arrangements were perfected whereby the tariffs to be filed by the director general should conform, essentially, to our tariff circular 18-A, and the formal integrity of tariff publication was thus secured. The momentous problem of railway wage increases was entrusted by the director general to the Railroad Wage Commission, a body of four, of which Commissioner McChord was a member. Studies to suggest possible economies of operation were prosecuted by Commissioner Aitchison along the line of short routing and the elimination of cross hauls. A similar study of fuel economy was made by Commissioner Woolley, with far-reaching results affecting not only the wider utilization of improved coking processes, but involving also the eventual establishment of central power super-stations which promises eventually to effect revolutionary economies in transportation. Various concrete situations such as the threatened discontinuance of track elevation in Indianapolis, the matter of disputed elevator rentals, and the institution of store door delivery at New York were committed to Commissioner Harlan. During this period, as well as subsequently, our bureaus were freely put at the disposition of the director general,—the Bureau of Safety Inspectors, the Bureau of Carriers' Accounts and the Bureau of Statistics being conspicuous contributors to the successful launching of the new regime.

There has continued until quite recently another co-operative enterprise resulting from the passage of the federal control act which ought not to be overlooked. The framing of the compensation contract with the carriers according to the terms of the federal control act presented a matter of no little difficulty. Four of my colleagues, Commissioners Clark, Meyer, Hall and Anderson, have collaborated for months in

the tedious and oftentimes vexatious drafting of the standard contract. A new bureau of the commission, called the Compensation Board, was constituted to cope with the necessities of this work. In this instance our voluntary administrative co-operation extended well beyond the initial period of federal control, but in essence has been akin to the work of individual commissioners previously cited.

A second and wholly new and distinct phase of the commission's activity resulting from federal control is *the advisory function*,—the rendering of advice at the instance of the director general in matters involving large administrative readjustments affecting the shipping and traveling public.

This second function is unlike the first in being not one of voluntary co-operation, but having its legal foundation in section 3 of the federal control act. We interpret this as laying upon us the legal obligation of responding to the requests of the director general for advice or expert opinion upon administrative matters which he submits for our consideration, and, when necessary or appropriate, of taking testimony and hearing arguments from all interested parties in the premises to enable us to discharge this function.

Two pending and pertinent illustrations of this second new function come readily to mind. I refer to the Railroad Administration's endeavor to effect uniformity in freight descriptions in the three classifications, and to the Railroad Administration's recent request that the commission advise as to the effectiveness of the proposed method of increasing express rates and of distributing the same between different sections of the country.

It will be observed in both instances that the commission is not requested to advise whether the end contemplated—uniformity in classification description or the augmentation of express revenue—is or is not desirable. That responsibility the Railroad Administration assumes as its own. But the *effectiveness of the methods* by which these proposed ends are to be attained is submitted to the commission for its deliberate judgment and opinion.

III. The third new phase of the commission's activity is the formal adjudication of complaints brought under section 10 of the federal control act. Without pausing to inquire how far the commission is to be governed in its findings by various considerations recited in this section of the statute, attention is directed to the point that it is *upon complaint*, and apparently *upon complaint only*, not in cases where upon our own motion or initiative an investigation has been started, that the commission is empowered to enter upon a hearing involving presidential rates. This consideration taken in conjunction with the fact that by General Order No. 28 practically all fares and rates became presidential-made rates and fares involved a temporary stoppage in the issuance of many matured and maturing reports and decisions of the commission. The rates attacked in practically all of our pending cases had been displaced by presidential rates. The presidential rates could not be passed upon by us nor a lawfully effective order issued affecting them until the presidential rates as such had been assailed by complaint to the commission. The commission had, therefore, no alternative but to institute new rules of procedure adapted to this situation, holding in abeyance a large number of cases until by supplemental complaint the pleadings had been so amended as to make the director general a party, thus enabling him to have his day in court.

The commission has already issued two reports and decisions in cases to which, by supplemental complaint, the director general had been made a party. The first was the Willamette Valley Lumbermen's Association *vs.* Southern Pacific Company. In this case mills upon the Willamette Valley had been required to pay upon their lumber traffic, in carloads, rates based upon the combination over Portland to various destinations in Montana and points east thereof. The decision and report found that rates so made were rela-

tively unjust and unreasonable and unduly prejudicial to the extent that they exceeded rates contemporaneously maintained from the Pacific Coast group, including Portland, to the same destinations and joint rates upon this basis were required to be established.

The second case was the Kaw River Sand & Material Company *vs.* the Atchison, Topeka & Santa Fe Railway Company, and was decided upon the second of this month. Here the complainant, located beyond the switching limits of Kansas City, was accorded the Kansas City rates to destinations upon the Santa Fe, but rates higher than the Kansas City rates if the destination was to a point upon a connecting line. The commission held that under present conditions involving the elimination of carrier competition, where there was absorption of switching charges within a switching district, the provisions therefor should be uniform where similar circumstances and conditions prevail, and the complainant was accorded relief in conformity to this finding.

THE RAILWAYS AFTER THE WAR

The recital hitherto has concerned itself wholly with the transition to federal control and the commission's activities as affected thereby. Let me, in closing, venture a few suggestions relating to our *post-bellum* railroad policy. Permit me to say in passing that these suggestions reflect not the views of the commission, but only my individual views and are necessarily tentative because of the impossibility of forecasting conditions as they may exist a twelve-month hence.

I am inclined to think that most well-posted students of transportation are coming to the conviction that the future of railroad operation in this country after the provisional arrangement now existing shall have terminated will conform to either one of two types. The first is complete government ownership and operation; the second is corporate control, not of the *ante-bellum* type, but modified and transformed in essential particulars.

Should the government continue the operation of railroads there will be difficulty in satisfactorily answering the contention that the government should own outright the property which it operates rather than pay rental therefor. In what method the government should acquire title, whether by expropriation or by an exchange of government securities for corporate securities, and if so, on what terms of exchange, I do not here stop to inquire, as the problem is involved and complex.

On the other hand, if there is a reversion to corporate control, there will be, in my judgment, certainly the following changes which must hereafter be imposed upon corporate ownership and operation.

First, the elimination of competitive waste. The reduction of passenger train mileage between important terminals has not evoked widespread complaint as to inadequate service. It has served to eliminate much of the conspicuous display and competitive waste of running a number of half-filled trains where a smaller number of more completely filled trains suffice. Similar economies in locomotive and freight car mileage have resulted from the utilization of shorter routes, and this possibility of economy should not vanish even should there be a reversion to corporate control.

Second, the system of open instead of closed terminals has, I think, come to stay; and it would perhaps be equally probable that common use of equipment in the general interest of the commerce and transportation of the country will not be readily surrendered.

Third, the realization of additional transportation economies which might result from the regional consolidation of parallel and competing lines or systems is unquestionably desirable in the public interest.

Fourth, the financing of railroads if corporate ownership continues will, in my judgment, be subjected to federal control whereby a competent tribunal will have to pass upon

proposed security issues and perhaps in co-operation with regional tribunals, will probably have to pass also upon the propriety and necessity for the construction of additional projected lines of railroad.

Fifth, a scientific system of cost analysis ought to be devised so that whether carriers are operated by the government or by owning corporations there will be greater accuracy than now exists as to the proper charges to be made for maintenance and depreciation in order to determine with some approach to certainty what the real earnings of the carriers are, in contrast to the earnings as computed at present.

In essence, the mission of the highway is to open the narrow gates of the parish upon the broad thoroughfares of the world; and our modern, steam-traversed highways will best fulfill their destiny when they accommodate, whether under government or corporate operation, the maximum of traffic with the minimum of friction.

Report of the Special War Committee

The report of the Special War Committee, which recommended that Congress should be asked to determine more definitely the relation which state regulations should bear to federal control, was in part as follows:

The state commissions have a record, since the war began, in harmony with the spirit and needs of the times. They have helped their country by allowing and facilitating reductions of service needed for the conservation of labor and fuel; by refraining from requirements, reasonable under ordinary conditions but wasteful of capital and energy in time of war; and by permitting without undue delay or controversy increases in rates fairly demanded by the rapid advance of wages and prices, and necessary to relieve utilities of more than their fair share of the burden of war conditions. On the positive side, they have also helped their country by special investigations and proceedings directed toward the more efficient handling of freight by both carriers and public, the conservation and better use of electrical energy and of labor, provision of transportation facilities for war industries, co-operation with fuel administrators, and the like. They have responded loyally to every call for assistance made upon them by those more directly connected with the prosecution of the war, and it is our only regret that such calls have been too few and that those in authority have too seldom appreciated the capacity for assistance which the commissions possess.

It was inevitable that in the war emergency radical changes should have been deemed necessary in the conduct of the affairs of the transportation and utility companies. It was inevitable that these changes should have raised perplexing questions of practice and of policy affecting the future as well as the present. It was equally inevitable that these questions should have caused doubt and anxiety to the state commissions, for they have occupied a difficult position. On the one hand has been the earnest desire not to interfere with measures, however drastic, which were essential to the prosecution of the war. On the other hand has been their duty to safeguard the public and to protect and preserve rights established after long struggle in the past. It is with some of the more important of these vital questions that the committee wishes to deal in this report.

RAILROADS

The situation has been productive of uncertainty and unrest. The act of Congress provided that the carriers, while under federal control, should be "subject to all laws and liabilities as common carriers, whether arising under state or federal laws or at common law, except in so far as may be inconsistent with the provisions of this act or any other act applicable to such federal control or with any order of the President." It was also provided that nothing in the act should be construed "to amend, repeal, impair, or affect the

existing laws or powers of the states in relation to taxation or the lawful police regulations of the several states, except wherein such laws, powers, or regulations may affect the transportation of troops, war materials, government supplies, or the issue of stocks and bonds."

The language quoted leads to the inference that Congress did not intend to reduce state regulation to a nullity, but wished to preserve it, so far as it did not interfere in any proximate and tangible way with the transportation of troops and munitions, and that this regulation which it sought to preserve included authority over intrastate rates, for the regulation of rates is undoubtedly an exercise of police powers. The interpretation placed upon the act by the Railroad Administration, however, has apparently been very different. We say "apparently," because no authoritative and comprehensive statement upon this subject has been made either by the director general or by his immediate legal advisers. In practice it has been assumed by the Railroad Administration that the President, acting through the director general, has power to initiate intrastate as well as interstate rates, regardless of the provisions of state statutes, and that the state commissions have no power of review over rates so initiated. They have been filed with the state commissions "for information only" and not in accordance with state statutory provisions. In the case of service, the practice has varied, but it has seemed to be the assumption that the power of the director general over service and accommodations is complete and that the state commissions may exercise authority, if at all, on sufferance only. In certain instances their authority has been directly challenged, even in matters of purely local concern. Recently, for example, representatives of the Illinois Central Railroad under federal control have formally declared that the Board of Railroad Commissioners of Iowa "has no power to render an order effective in any way affecting the property in any manner connected with the use and operation" of that railroad, and that all its property "is in the possession and under the control of the United States government; that said control and possession are exclusive of all other controls and possession."

Confronted by this situation it has been the belief of this committee that the state commissions ought not to embarrass the government, at least while the war continued, by litigation, but should seek the adjustment of differences by friendly negotiation, and endeavor in every way, regardless of jurisdictional questions, to aid in making federal operation a success. We have acted from the beginning upon this belief, and it is our information that this has been very generally the attitude of the state commissions.

On December 27, 1917, the president of this association wrote the director general tendering the hearty co-operation of the state commissions and stating that their organizations were at his command for the service of the country. This was followed by a conference at Washington on January 16, and by a further conference at White Sulphur Springs on June 26, at which as many as 30 states were represented. The director general was told that the state commissions wished to be of all possible assistance, but were perplexed by doubt and uncertainty; that shippers and the general public were calling upon them for relief, while many railroad officials challenged their jurisdiction. The following paragraph from the resolutions then presented indicates the remedy suggested:

The state commissions do not desire to work at cross-purposes with the national railroad administration. We know that in unity there is strength and we want to help present a common front in this hour of need. We believe that most of the difficulties which now portend would be swept away if you would issue a general order or in some other way set forth clearly and definitely your conception of the relationship between the national railroad administration and the state commissions. We believe that a definite plan can be worked out under which, waiving for the time bothersome questions of jurisdiction, the states will know definitely your views on what they should do and what they should not do. While we cannot prevent any passenger or shipper from raising issues of jurisdiction, and while we can not bind even the commissions, we can say to you that

such a plan, worked out between you and ourselves and definitely announced by you, would undoubtedly receive the hearty and loyal support of most of the state commissions and would go far to prevent questions of jurisdiction being raised from other sources.

Subsequently, at the director general's recommendation, this matter was taken up by the war committee with Judge Prouty of his staff and a definite draft of a general order on the plan suggested was prepared.

Up to the present time, neither this general order nor any order with similar intent has been issued by the director general. But even if one should be issued, while the situation would be clarified and improved, there would still be need for further action, at least now that the war is over. There will no longer be the same need for concentration under a single leadership upon one end, regardless of all others, and the powers and duties of the state commissions with reference to the railroads ought not, we think, to be dependent either upon the sufferance of the director general nor, so far as it can reasonably be avoided, upon interpretation by the courts of ambiguous provisions after prolonged litigation. Undoubtedly the question could be raised in the courts, for there are many who believe that the Railroad Administration has gone, even in time of war, beyond constitutional right in limiting state regulation, and the power of the federal government over intrastate matters is certainly far more restricted in time of peace. But, without waiver of legal rights, it is desirable that the subject should receive renewed consideration by Congress. In other words, if federal control is to continue after the war ends,—and we assume that it will, for some time at least,—the issue ought to be faced squarely, and there should be a more definite determination by Congress than is contained in the present act, of the status of state regulation with reference to such control.

CONCLUSIONS OF COMMITTEE

From the experience already gained, it seems to your committee that the following conclusions, among others, may fairly be drawn:

(1) The operation of a national system of railroads in the United States is not like the conduct of an ordinary business, if for no other reasons, because of tremendous size. There is danger in too great centralization of control and the creation of a bureaucracy too far removed from the immediate influence of public opinion. However well intentioned they may be, the chief executive officers of such a system cannot have any adequate knowledge or understanding of local conditions and problems, and the inevitable tendency is to arbitrary action and the development of rules superficially uniform, but often discriminatory and unfair in their application to particular cases.

(2) While this difficulty may be overcome in some measure by delegation of authority, subordinates are responsible to the man who appoints them and tend, in the last analysis, to rely upon what they believe to be his wishes rather than upon independent judgment. This has been well illustrated in the case of the present federal control. The attempt has been made to delegate authority in rate controversies to regional and district committees, but, in its actual working, this plan has caused dissatisfaction. A common result has been confusion, delay and final reference of the dispute to the central authorities in Washington.

(3) Under normal peace conditions the people of this country will not be satisfied, we believe, with a mere opportunity to bring their complaints in regard to rates and service before railroad executive officers who can refuse public hearings, if they so desire, and say "Yes" or "No," without giving their reasons, subject to appeal to Washington which, in most cases, is a long distance away.

(4) It is our belief that local tribunals of semi-judicial character for the consideration of local questions will be necessary to a successful and democratic administration of

the railroad properties, even under federal control, and that the state commissions are well suited to the purpose. A similar result might, it is true, be secured by the appointment of regional federal commissions; but tribunals directly responsible to the local communities will be far more satisfactory in the long run. They will offset bureaucratic tendencies, and introduce an element of home rule which the size of the country and the complexity of its conditions make essential.

(5) Railroad regulation started with the states, and every advance in the law has been prompted by and secured as the result of the experience of local commissions. Disregarding the past, however, we believe they have, since federal control was established, amply demonstrated their usefulness to the public because of their intimate acquaintance with local conditions. Even before the act of Congress was passed, the widespread publicity given by the secretary of this committee to the proposed car spotting charge at industrial tracks resulted in its abandonment, and influenced Congress in reserving to the Interstate Commerce Commission power to revise rates upon complaint. Activity of state commissions after General Order No. 28 was issued, resulted in a speedy elimination of a provision which would, by the immediate raising of all intrastate rates to the interstate basis, have inflicted great injury upon large sections of the country, and also in broad changes in the minimum charge provisions. Their continued activity has since resulted in other important modifications, and many complaints in which they have interested themselves are now pending.

(6) The need for local public tribunals is accentuated by the fact that the men now operating the railroads under federal control, aside from the director general, are very largely the men who operated them under private control. Broadly speaking, the situation could not well be different, but in view of the training and acquired prejudices of these men, and the fact that many of them believe that federal control will be temporary, the desirability of preserving established means of public regulation is evident. At the time when the war began they were united in an endeavor practically to eliminate the states from the field of railroad regulation. It was both necessary and desirable to place the operating management of the roads in the hands of experienced railroad men, but policy-determining power is a different matter. Men who for years have viewed railroad policy in the light of railroad interest do not over night become satisfactory exponents of the public interest. It is for this reason that the War Committee has urged larger representation of the public upon the director general's staff, and it is equally a reason for maintaining state regulation.

(7) This need is further emphasized by the fact that the present Railroad Administration has shown a tendency to go far beyond immediate war purposes in its conduct of railroad affairs. It is considering, and to some extent has already introduced, radical and far-reaching changes in operation, management and rate structure. While such changes may prove desirable, it is clear that they require most careful consideration and that state commissions, because of their special knowledge and experience, can be of great value in this connection. As this committee pointed out in a letter to the director general, however imperfect the old rate structure may have been, it was upon this structure that the business of the country has developed, and sudden or violent changes are likely to do more harm than good.

(8) Finally, it may be said that federal control does not remove the need, upon general grounds, of a co-ordinate but independent system of public supervision. One of the dangers of public operation of utilities is that it may be subject to political or financial abuse, involving waste, graft and inefficiency. This danger is more likely to develop in time of peace than in time of war, and the only known

preventive is eternal vigilance. The value of separate state regulation in this respect is obvious.

Stating the situation concisely, while a federal control of railroads, which excludes local regulation may, perhaps, be tolerated in war time, it is neither expedient nor wise in time of peace. This view is based upon the merits of the question, without regard to any constitutional right which the states may, and probably do, have to regulate commerce within their own borders, even when carried on under federal auspices.

So far as service and accommodations are concerned, we believe that this proposition admits of no reasonable dispute. It surely is unwise to leave solely to the discretion of an organization centering at and responsible to Washington the operation of local passenger trains, the establishment, maintenance and sanitation of station facilities, the investigation of accidents, the protection of railroad crossings, the provision of spur tracks and other matters affecting local service, safety and equipment. We know of no way in which adequate consideration can be given to local conditions, and the time and rights of the public protected, unless independent local tribunals like the state commissions are permitted to retain the same direct authority in dealing with such matters which they have exercised for many years past. The idea, apparently held in some quarters, that this problem can be met by the establishment of a central bureau at Washington is manifestly ill-conceived. Complaints cannot be handled satisfactorily by long-range correspondence. One of the most valuable features of state commission work has been the informal adjustment of innumerable disputes by personal investigation and direct dealing with parties.

The same may be said of general supervision exercised over accounts, expenditures and methods of administration. Publicity is a cure for many evils, and the mere fact that a government bureaucracy is substituted for private management does not make such publicity any the less desirable. If state commissions, independently appointed, are given general powers of investigation and supervision over accounts and operation, it will be a safeguard against the abuse of public management which so many fear, and a direct incentive to a conduct of affairs which will in other respects endure the light of day.

In the realm of rates there is more opportunity for dispute. One of the major themes of the railroad representatives who united last year in an appeal to the Newlands Committee for the practical elimination of state regulation was the confusion caused by the conflict between interstate and intrastate rates; and the problem presented by the so-called "Shreveport Cases" has been recognized and considered by this association. Clearly, more uniformity, greater concentration and better co-operation in the treatment of rate questions are desirable than have prevailed in the past. On the other hand, we think it equally clear that the knowledge and experience gained by the state commissions in long years of dealing with these questions are valuable assets which ought not to be lost to the country under either private or federal control. Their value has been demonstrated time and again in practice during the past few months.

Your committee has no hesitation in saying that under federal control, the state commissions should possess the right of review over intrastate rates. Loss of time and unnecessary conflict of treatment can be avoided in important cases by friendly co-operation between the state and federal regulatory bodies, by the making of a joint record, and by conference prior to final decision—in other words, by following the practice already successfully introduced in New England. We also believe that the right of review should and will be exercised in no arbitrary way and with due regard for the contracts which have been entered into between the Railroad Administration and the carriers and for the necessity of protecting the federal treasury.

Summing up what has been said above, the Special War

Committee believes that this association, if federal control is to be continued, should ask Congress to determine more definitely the relation which state regulation should bear to such control, this request being made, of course, without even implied waiver of any constitutional right. In our opinion, it is desirable in the public interest that the state commissions should possess, under federal control, substantially the same authority over service and rates and the same general powers of supervision and investigation which they have exercised under private railroad ownership. We believe that these recommendations are not inconsistent with the intent of Congress at the time when the existing act was passed. Action of the kind suggested is preferable to the litigation which seems likely to result if it is not secured. When the war emergency passes, however, it is to be assumed that each state commission will in any event exercise such jurisdiction as it believes that it possesses.

Regardless of these questions, we further strongly urge the state commissions to do everything in their power to help the Railroad Administration in the successful operation of the railroad properties, and to help shippers and the general public to secure proper adjustments of reasonable complaints. They should respond promptly and frankly to any request for information which the Railroad Administration may make and, upon their own initiative, furnish further suggestions in regard to the operation or improvement of the properties which the public interest may seem to demand. In the case of shippers, we believe that the commissions should continue their activity in investigating changes in rates, interstate as well as intrastate, and in endeavoring to secure reasonable adjustments. In particular, we recommend thorough consideration of the tentative class rate scales for the different sections of the country which have been prepared by the Railroad Administration, and which have been or are to be sent to the Interstate Commerce Commission and to the state commissions for criticism and suggestions. This is an exceedingly important matter. While it is true that railroad rates often seem illogical and crudely complex and inconsistent, too bold surgical treatment of such imperfections is likely to produce more ills than it cures, and cautious consideration is peculiarly desirable.

Whether or not federal control should continue even beyond the time specified in the present act, or, if not, what alternative plan should replace it, are questions which lie, in our judgment, beyond the province of the Special War Committee. They seem certain to provoke widespread controversy, and the state commissions should prepare to aid Congress in their consideration. The alternatives seem likely to be the continuation of federal control in its present or some modified form; the resumption by the carriers of their former status unchanged; or some midway plan, which we understand owners of their securities are formulating, for the creation of regional railroad systems under federal charter, with private management, but subject to a centralized and comprehensive system of public regulation accompanied by some public guarantee of a minimum return on securities. In order that the state commissions may be informed and in a position to act, we recommend that either the Executive Committee of this association or a special reconstruction committee be directed to keep in touch with the situation as it develops, with power to advise the commissions fully and to represent them before Congress or other tribunals in the discussion of these questions when so authorized.

EXPRESS COMPANIES

On July 1, 1918, the four principal express companies of the country transferred to a new corporation, known as the American Railway Express Company, all their property, excepting cash or treasury assets and certain real estate; and upon the same date a contract became effective under which the director general employed this new express company as the sole agent of the government, under his supervision, to

conduct the express business upon all lines of railroad under federal control.

Without undertaking to analyze all the terms of this contract, of which the members of this association are fully informed, it is sufficient to say that the director general has assumed that he has the power to initiate changes in express rates, exempt from suspension of either the Interstate Commerce Commission or state commissioners, and has acted upon this assumption. Whether or not he deems rates so initiated to be subject to review by the commissions has not, to our knowledge, been stated.

The right of the director general to exercise exclusive authority over express rates and charges is shrouded in even greater doubt than exists in the case of railroad rates and charges. Presumably it is dependent, if it exists at all, upon the general war power of the President. If this is the case, it is a right which will cease to exist when the war is over.

The desirability of positive action by Congress with a view to narrowing the opportunity for litigation, and determining more definitely the status of the express companies and of their public regulation, is quite as desirable as in the case of the railroads, and similar arguments apply.

With the railroad and express properties under unified control, the time is opportune for an investigation of this question which will determine whether the railroads should receive, as now, a certain percentage of the express revenue, and what that percentage should fairly be, or whether their compensation should be fixed upon some more equitable basis. Such an investigation would also, we think, throw needed light upon the question as to whether the maintenance of separate express companies is desirable or whether the railroads should do this business directly with their own facilities.

Proposed Class Rates Opposed

The proposed standard scales of class rates to be applied to both state and interstate traffic were the subject of a special session on Tuesday evening, called to offer an opportunity for an informal discussion. This meeting was made the occasion for many criticisms of the Railroad Administration with particular reference to its attitude toward the state commissions. There were many statements that the proposed revision of rates could not in any sense be called a war measure and there were other objections on the ground that the proposed scales would in many specific instances bring about large increases in rates in certain states. Some of the commissioners proposed to rest their objections on the ground that the railroad Administration has no authority to fix rates for state transportation, while others wished to attack the rates on their merits.

A special committee appointed at the meeting presented a resolution, which was adopted, declaring to the director general and to the Interstate Commerce Commission that it is the opinion of the association that the present is an inopportune time to establish uniform standard scales of class rates to apply on all traffic and calling attention to the fact that the state commissions are charged with the duty, under the statutes of the several states, of prescribing and establishing reasonable schedules of freight rates. These commissions cannot and do not subscribe, the resolutions stated, to the view that they can be required in times of peace to surrender their jurisdiction over such matters, and they believe that the present abnormal conditions, with high unit costs due to the war, make it inadvisable to enter upon an investigation for the purpose of establishing standard schedules revolutionary in character. When the times again favor the work of readjustment and the establishment of uniform scales they should be taken up by the Interstate Commerce Commission in co-operation with the state commissions and after full investigation orders should be made by the commissions covering their respective jurisdictions.

Jurisdiction of State Commissions

The question of the jurisdiction of the state commissions again came up when Director Prouty addressed the meeting. He said the director general had not made announcement of his attitude toward the question because his staff has not agreed and the director general has not reached a final conclusion on the interpretation of the law and also because he has considered it more important to go ahead than to spend time in talking about jurisdiction. He hoped that the administration and the commissions could get together on that basis for the purpose of accomplishing the things that ought to be accomplished. He thought Congress had intended to put in the hands of the President the power to do what it was necessary to do with the railroads but now that the military pressure has been relieved there should be no more practical difficulty over the question of jurisdiction of the state commissions. He said the director general recognized that the state commissions could handle local matters more satisfactorily but he advised them, instead of issuing orders, to make recommendations to Washington.

Judge Prouty then offered to answer any questions; these disclosed considerable resentment because railroad officers had displayed a tendency to ignore the state commissions and because they had been advised to take up rate matters with the regional and district traffic committees. A. E. Helm, counsel for the Kansas commission, said it was doubtless proper for the director general to have selected experienced railroad operating men as his assistants but he did not see the necessity of his doing the same with the traffic officials and asked whether a state commission was expected to continue to take instructions from a traffic committee. Judge Prouty said they had the option of going to the committee or direct to his office in Washington, depending on whether or not they thought it worth while to try to enlist the support of the traffic committee. He said he thought a common understanding of the question of jurisdiction would be advisable but that apparently the state commissions had one idea of it and the administration another; the most satisfactory way to get along would be to ignore the question and "not start another war."

Director Prouty also discussed the progress of the valuation saying it would not be necessary to change his prediction of last year that the field work would be completed as of the average date of January 1, 1920, but that the office work had been more seriously impeded by the war and that more than another year would be required to complete it. He thought the land and accounting work could be finished by January 1, 1920, but that the completion of the work would depend on how much time the railroads spent in contesting the tentative reports. The bureau has been instructed, he said to include a final value in the ensuing tentative reports.

Other Committee Reports

Among the reports of committees presented was one from the Committee on Public Ownership and Operation which, however, presented no conclusions, but merely recommended that the committee be continued with instructions to proceed with the general study of the subject. The committee recalled that last year in its report it had made a prediction that "higher rates appear inevitable unless the government becomes a directing force and takes its controlling part in the shaping of the new railway policy." Since that time, the committee said, the government has assumed the actual operation of the railroads with the result that rates have become very much higher than the imaginations of a year ago could have pictured. For this reason it did not care to venture any further predictions and stated that it is impossible at this time to present anything approaching or even suggesting specific conclusions or recommendations.

The Committee on Safety of Railroad Operation, of which C. C. McChord of the Interstate Commerce Commission is chairman, presented a report in which it called attention to the fact that the method of enforcement of the federal safety statutes has been changed by General Order No. 8 of the Railroad Administration and that it is still too early to say whether the application of disciplinary measures as contemplated by that order will prove an effective substitute for court procedure. It appears from the results of inspections during several months following the promulgation of the order that the fear of punishment of the individual has not served as a sufficient deterrent to bring about any marked improvement in the addition of safety appliance equipment.

The report also shows that the number of cases of excess service reported by 10 railroads in the eastern section shows a very material increase for the year ending June 30, 1918, from 28,755 in 1917 to 126,856 in 1918. For the four years 1914 to 1917 the total number of cases was over 9,000 less than in the single year 1918. On one of the roads the number of cases of excess service reported increased from approximately 4,000 to nearly 37,000. Many of these cases, the report says, are reported to be due to inability of railroads to secure necessary men and the disturbed industrial conditions present other problems affecting safety of railroad operation. It is true of railroading as well as of other hazardous occupations that accidents increase alarmingly when large numbers of inexperienced men are employed in responsible positions. It is not necessary, the report says, to look for undeveloped devices and inventions to bring about an increase in safety because the general adoption of the best devices available and the best methods and practices which have been developed as a result of years of experience and which are now commonly employed by the more progressive roads would result in a very material reduction in the increasing annual list of railway casualties.

Officers of the association were elected as follows. President, C. E. Elmquist, of Minnesota; first vice-president, C. M. Candler of Georgia; second vice-president, J. B. Eastman of Massachusetts. J. B. Walker, secretary and L. S. Boyd, assistant secretary, were re-elected.

A resolution passed on Thursday is appended on page 867.

Train Accidents in September¹

THE FOLLOWING is a list of the most notable train accidents that occurred on the railways of the United States in the month of September, 1918:

Collisions					
Date	Road	Place	Kind of accident	Kind of train	Kil'd Inj'd
9.	Penn.	No. Olean	bc	P. & F.	0 3
†10.	Chi., B. & O.	Alliance	bc	P. & F.	11 21
†10.	Boston & M.	Dummerston	rc	F. & P.	3 16
†17.	St. Louis-S. F.	Marshfield	bc	P. & F.	13 49

Derailments					
Date	Road	Place	Cause of derailment	Kind of train	Kil'd Inj'd
3.	Norfolk & W.	Portlock	neg.	P.	0 8
27.	Southern	Hot Springs	.....	F.	2 0
29.	N. Y. Central	Cook, Ind.	b. truck	F.	5 0

Other Accidents					
Date	Road	Place	Cause of accident	Kind of train	Kil'd Inj'd
5.	Lehigh Valley	Corfu, N. Y.	boiler	F.	3 0
12.	New York Central	Fonda, N. Y.	boiler	F.	2 1

The trains in collision at North Olean, N. Y., on the

evening of the ninth were southbound passenger No. 9336 and a locomotive, without train, standing on the main track. Three trainmen were injured. The collision was due to the error of a telegrapher in reporting the track clear while the yard engine was still occupying the section.

The trains in collision near Alliance, Neb., on the 10th were west-bound passenger No. 43 and a work train. Both locomotives were wrecked, and the first coach of the passenger train was partially telescoped. Six passengers were killed and 18 injured, all of them in the first coach. Five employees (not on duty) were killed, and three injured. The collision was due to the failure of the men in charge of the work train to protect against No. 43.

The trains in collision on the Boston & Maine at Dummerston, Vt., on the afternoon of the tenth were a southbound local passenger and a following southbound freight. The three rear cars of the passenger train were badly damaged; three passengers were killed and one trainman and 15 passengers were injured. The line at this point is operated by automatic block signals. The train which was run into was passed at Dummerston by the White Mountain express. After the express had cleared the block section the switch was opened and the train moved immediately from the siding to the main track. It had stopped to permit the trainman to set the switch straight, and while standing was run into. This movement from the side track was made in disregard of the rule that after the switch had been opened the train should not enter the main track until sufficient time had elapsed to allow a train that had passed the signal in the rear to be brought to a stop before reaching the switch. The freight train had received a caution signal 8,400 ft. in the rear of the switch. This signal was held in the caution position by the express train then traversing the block in advance. The local train was standing just at the entrance of that block.

The trains in collision near Marshfield, Mo., on the evening of the 17th of September, were an eastbound extra carrying United States troops, and a westbound freight train. Both engines, several passenger cars and a number of freight cars were badly damaged. Twelve soldiers and three trainmen were killed and 37 soldiers and two trainmen were injured. The troop train was being run on a schedule order, but no copy of this order had been furnished to the freight train; and in addition to this the troop train had run past an automatic block signal set against it.

The train derailed on the Norfolk & Western at Portlock, Va., on the evening of the third was eastbound passenger No. 4. The engine and first four cars were overturned and the fifth car derailed. The engineman was severely scalded and the fireman seriously injured. Three other employees and three passengers were slightly injured. The train had run past a signal set against it at the grade crossing of the Virginian Railroad, and was thrown off the track at the derauling switch.

The train derailed near Hot Springs, N. C., on the 27th was a westbound freight. The engineman and fireman were killed.

The train derailed on the New York Central near Cook, Ind., on the 29th, was a northbound freight. By the breaking of a truck, six cars were thrown off the track and fell down a bank; and five boys (trespassers), riding on one of the cars, were killed.

The train involved in the accident near Corfu, N. Y., on the fifth was an eastbound freight, drawn by two engines. The boiler of the leading engine exploded, was blown off the frame and lodged on the westbound track. Its wheels and frame and running gear were not thrown off the track, and were pushed some distance until the train could be stopped. The engineman, fireman and one brakeman were killed. The explosion was due to low water.

¹Abbreviations and marks used in Accident List:
rc, Rear collision—bc, Butting collision—xc, Other collisions—b, Broken—d, Defective—unf, Unforeseen obstruction—unx, Unexplained—derail, Open derailing switch—ms, Misplaced switch—acc, obst., Accidental obstruction—malice, Malicious obstruction of track, etc.—boiler, Explosion of locomotive on road—fire, Cars burned while running—P. or Pass., Passenger train—F. or Ft., Freight train (including empty engines, work trains, etc.)—Asterisk, Wreck wholly or partly destroyed by fire—Dagger, One or more passengers killed.

The train involved in the accident at Fonda, N. Y., on the 12th was an east-bound freight. The boiler of the locomotive exploded and the fireman and a student fireman were killed and one other trainman was injured. The explosion was due to low water.

Accidents to electric cars were reported in September from Hammond, Ind.; Jamestown, N. Y.; Turners Falls, Mass.; and Bryan, Tex. The last named, a derailment occurring on the 23d, is the only one in which, according to the reports, a fatality resulted; one passenger killed, two injured.

Supply Field Expects Continuing Good Business

Requirements of Railroad Administration, Rehabilitation Overseas and New Markets the Reason

THE SIGNING OF THE ARMISTICE with Germany has promptly brought forth many expressions of opinion as to the effect of the coming of peace on the business of the railway equipment builders. The need for new cars and locomotives for our own railroads, the need for new equipment in the rehabilitation of the railway lines of Belgium and France, as well as the demands from other countries which have been practically unable to secure new railway material for replacements and extensions since the outbreak of the war, it is felt all point to a continuing favorable business in railway supplies.

Westinghouse Air Brake Company

In a memorandum to the stockholders of the Westinghouse Air Brake Company, dated November 7, President John F. Miller says:

In view of the fact that the change in the company's fiscal year has postponed until March the issue of the annual report and accompanying financial statements which you have heretofore received in October, it is proper that you should be advised in general terms of the present condition and future outlook of the company's business. This action seems especially pertinent since there is now more or less uncertainty as to the probable effect of an immediate peace upon the prospects of the larger manufacturing concerns, many of which have been principally employed in war work.

Contrary, perhaps, to the general opinion, the Westinghouse Air Brake Company is not now engaged in the execution of any contract or contracts involving munitions or other products used directly or solely for war purposes. The brake equipments and draft-gear now being supplied for application to the cars and locomotives ordered by the United States Railroad Administration include a relatively small number originally intended for use on American lines in France, but the demand for additional locomotives and cars for use in the United States is so great and so insistent that even if the United States government should for any reason decide not to ship additional locomotives and cars to France, there is no doubt that the entire number of equipments on order will be required in the United States as promptly as they can be produced. Again, the assistance that the United States must lend in the rehabilitation of Belgium and France will undoubtedly continue the increasing demand for additional transportation facilities in this country, so that there is no reason to anticipate any reduction in the volume of brake business during 1919.

Current monthly shipments of air brake material and accessories exceed in value the shipments of any corresponding period in the history of the company, and the value of unfilled orders on November 1, 1918, approximated \$11,000,000.

The same statements apply with equal force to the signal business of the Union Switch & Signal Company, which promises to show unusually favorable figures for the fiscal year ending December 31, 1918, with every prospect of their continuance through the year 1919. The war work of that company, which has been handled with distinguished success and without any interference with normal activities, will bring the net earnings for the year 1918 much beyond any previously reported for a similar period. The Switch company's principal contract with the United States government is nearing completion, and the supplementary contracts on which work has been commenced can be canceled without loss, if the government so elects.

The business of the company's other subsidiary and associated companies, the National Brake & Electric Company, of Milwaukee; the American Brake Company, of St. Louis, and the Loco-

motive Stoker Company, of Pittsburgh, has been and continues to be extremely satisfactory.

Pressed Steel Car Company

President F. N. Hoffstot of the Pressed Steel Car Company, replying to inquiries concerning the effect of the termination of the war on the business of the company, is quoted in Monday's issue of the Wall Street Journal as saying:

"It is my opinion that an early peace would be greatly to the advantage of this company.

"Strictly war business, subject to cancellation and adjustment by the government, represents but a small percentage of our present unfilled orders, although our entire capacity is engaged on government work of one kind or another, but as this production is used essentially for construction and upbuilding, we feel our business would be increased rather than decreased as a result of peace. It is only recently that companies in our particular line of business have been able to secure even the promise of a uniform, adequate supply of materials and men, but the curtailment of non-essential industries should greatly improve conditions both as to materials and labor.

"It is my opinion, that there will be a large and increasing demand for our products, not alone from the suspended and accumulated demands due to the war, but from foreign countries whose stocks of our products have been completely exhausted."

United States and Great Britain Only Locomotive Exporters

An interesting analysis of the export prospects in the locomotive field has been made by the New York stock exchange firm of Clark, Childs & Co. This analysis emphasizes that there is a severe shortage of locomotives the world over and shows that the great demand for motive power for the railways of the world that will follow the coming of peace will have to be met entirely by the plants in the United States and England. The analysis follows:

Annual capacity of America's only two big locomotive building concerns, the Baldwin and the American, was between 5,500 and 6,000 high pressure type engines. It is reasonable to estimate that war-time efficiency and plant extensions have enabled these concerns to increase production possibly 1,000 locomotives per annum.

Domestic demand a year ago was such as to consume the entire production of the country. In the meantime railroad equipment the world over has been deteriorating, and when the war ends only two countries, America and Great Britain, will be in a position to supply their own needs, and to take locomotive contracts from the rest of the world.

Indeed, it appears that England and the United States are likely to be snowed under with contracts for motive power. British works are about the only competent ones left in the world outside the United States. Great Britain's capacity at the beginning of the war was about 2,500 locomotives per annum, and the shops were kept busy supplying home demands, as well as those of "the Possessions," and in building locomotives for those companies in other countries wherein British capital was strongly represented.

When war broke out the shops were taken over by the British government, put to work on munitions and ordered to build no more new locomotives, and to merely keep old ones in repair. Thus the condition of locomotive equipment in the British Isles and in the Colonies must be such it will keep the English fa-

cilities busy for a long time, leaving other markets pretty much to America, provided that this country can give assurance of prompt deliveries.

In Germany, before the war, locomotive production was about 4,800 per annum, but it is unlikely that Germany will get a great deal of "outside" locomotive business, and her home needs for equipment must be pressing.

France, before the war, was always short of locomotives, and five of her six shops were in territory ravaged by the Germans. Before French works can be reconstructed France will be forced to buy enormous numbers of locomotives in some other market.

Belgium had eight locomotive works, sufficient to supply her own needs and to manufacture a surplus for sale to neighbors, but her factories have been razed and machinery carried off to Germany.

Austria bought most of her locomotives in Germany.

Russia's locomotive works, of which there were several of considerable proportions, have either been destroyed by her own people or by the enemy.

Holland, Denmark and Norway purchased their locomotives in foreign markets.

Italy manufactures merely enough railroad motive power for her own needs, and cannot at present increase her output.

There is bound to be great expansion in China, which has no locomotive building facilities. Japan constructs only enough for her own needs. There are no locomotive works of any consequence in the Balkans and none that are modern in Turkey. Every railroad in South America is short of locomotives. Asia and South Africa are suffering for locomotives and other equipment.

In short, it would appear certain that one great phase of reconstruction to follow cessation of hostilities is an era of locomotive building such as the world has never seen. Only two countries are in position to accept locomotive contracts, and in this country there are only a few companies to handle orders, which seem likely to come pouring in on a scale sufficient to keep them working day and night for a considerable period after the disbandment of the opposing armies.

Marked Success of "Sailing Day" Plan

TO THE RAILROAD MAN car conservation during a period of car shortage means much; but to some shippers, who look only to their immediate needs, car saving is a desideratum insufficiently tangible to appeal to them. But the sailing-day plan, as introduced in the Northwestern region, has demonstrated to them that economy in cars also produces greater regularity and promptness. This engages their interest and their co-operation. On June 6, previous to the inauguration of the scheme, a shipment of two crates of drugs left Chicago at 11:30 p. m. and arrived at Ossian, Iowa, at nine on the third morning. Under the present schedule similar shipments leave Chicago at 11:30 p. m. and arrive at Ossian at nine on the second morning, saving 24 hours. Formerly shipments were transferred at Dubuque, Iowa, transfer. Now they are loaded in a direct peddler car at Chicago, breaking bulk at Giard, Iowa, and peddling beyond that point. Innumerable instances of this kind could be cited. The committee has rearranged the loading from Wisconsin points through Milwaukee in both directions, cutting out the transfer at that point by establishing sailing days at Waukegan, Ill.; Kenosha, Wis.; Racine, Sheboygan, Manitowoc, Fond du Lac and Winona, Minn., Minnesota transfer; Eau Claire, Wis., and one or two other points. Practically 80 per cent of the merchandise formerly transferred at Milwaukee is now being loaded through in peddler cars. Milwaukee formerly transferred 75 cars a day; now about 15, and the committee is confident that a further reduction can be made. Between some points the new arrangement has saved 48 hours.

Theoretically it may seem possible to get freight through a big terminal transfer without loss of time; but, practically, the switching of cars through a congested terminal, moving them to freight houses, etc., is subject to many delays.

The sailing-day plan promotes regularity of movement. Sailing days are established only after a careful study of the volume of traffic, thereby insuring full tonnage on the days designated. Cars are never held back for additional

tonnage. At Green Bay, Wis., transfer in September of last year, when 1,195 cars were loaded, no less than 283 were set back for additional tonnage. In the same month of this year 1,090 cars were loaded, and not one was set back.

The improvement in service rendered under the plan is beginning to make an impression on the shipping public, and already a considerable number of letters have been received from shippers and consignees commending the new scheme. A typical letter says: "The sailing-day plan of handling freight is very satisfactory to us and meets with our approval, for the reason that orders come to us more regularly. This gives us a chance to put up our goods in better shape and get them to our customers in better condition."

The sailing-day committee in the Northwestern region was appointed last summer. At the present time practically every principal station in the region is sending cars to specific points on specific days. Cars carrying from two to three tons are now rare; the rule is full tonnage at regular daily, semi-weekly or tri-weekly intervals. The saving in cars in the Northwestern region at the present time amounts to over 20,000 a month, an economy which is reflected, of course, in a larger available supply of cars for other purposes. At Green Bay transfer the average loading per car in September, 1917, was 11,820 pounds; this year 15,930 pounds, an increase of 4,110 pounds. Last year 1,195 cars were loaded, this year 1,090, a reduction of 105 cars. It is expected that some of the transfer stations can be discontinued.

The sailing-day scheme is resulting in a decrease in the loss and damage to merchandise, according to claim departments of railroads in the region. At all of the principal stations in the region freight has been concentrated on one, two or more lines making the loading of through cars possible, whereas under the old system several transfers were necessary. Obviously, the fewer the transfers the less the damage resulting. The plan now includes the operation of pick-up cars on certain days, increasing the percentage of loaded cars in local trains.

The concentration at certain centers of freight destined to points in the East, thereby making possible through cars to Buffalo, Cleveland, New York, etc., has reduced the congestion at Chicago and other gateways, has expedited the movement of freight, and has helped to get rid of the embargoes on merchandise that formerly existed in Eastern territory. In all of the details it has been the aim of the Railroad Administration to operate the plan for the best convenience of the shipping public. At Chicago, the largest terminal in the region, with a large number of receiving and transfer stations, the sailing-day plan, under the immediate supervision of the terminal manager, was put into effect only six weeks ago.

Christmas Mail

The division superintendents of the railway mail service, following a conference at Washington, estimate that there will be 200 carloads or 100,000 sacks of mail arriving at New York during a 10-day period beginning about November 10, to be sent to soldiers and sailors who are in Europe or on the seas. It is expected that the Christmas mail throughout the United States will break all records, and that the volume of all classes of mail handled this winter will be greater than ever before. In previous years it has been possible for the railway mail service to reduce its force during the summer months, but during the past summer it has been necessary to greatly increase the working force over the entire country, due to the increased volume of mail matter. The winter months are always the heaviest, but during the past summer the volume of mail handled was greater than last winter, not alone in the eastern states, where most of the war work is done, but over the entire country. One superintendent of a division in the Atlantic coast states reports an increase of approximately 40 per cent over last summer.

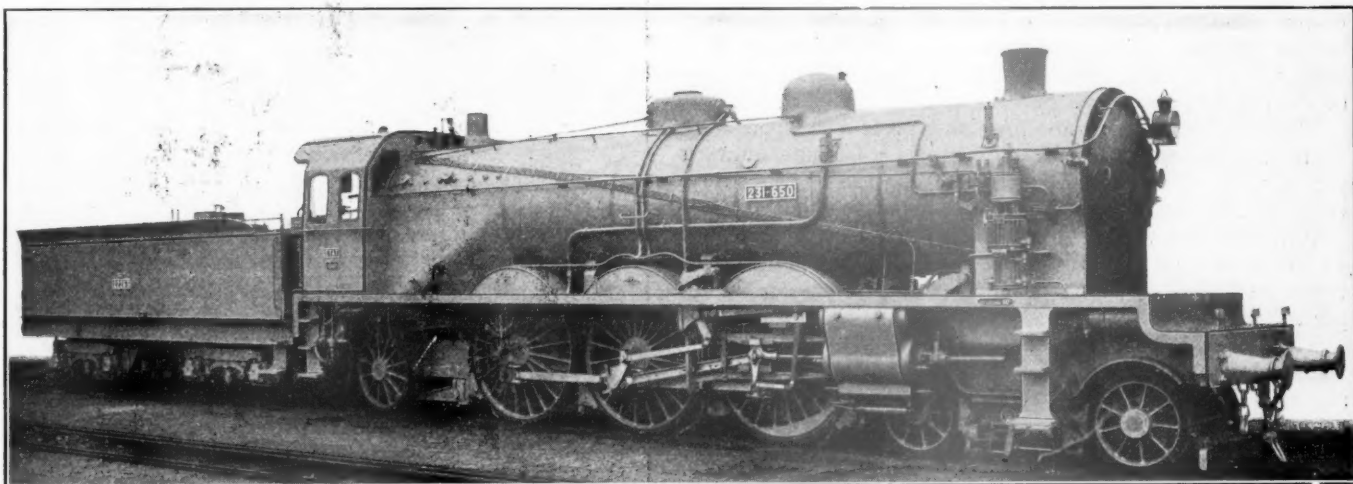
Recent Locomotives for the French State Railways

Four-Cylinder Compound Pacific Type and Simple Consolidation Type Built in Great Britain

By F. C. Coleman

A CONSIDERABLE number of British built heavy 4-6-2 express passenger locomotives and 2-8-0 freight locomotives have recently been put into service on the French State Railways. The passenger locomotives are four-cylinder compounds of the Pacific type, a class

coupled axle. The valves of the low-pressure cylinders are flat slides, their location being shown in one of the illustrations. In the case of the low-pressure cylinders, intercepting valves actuated by hand-operated pneumatic gear are provided to allow the working of the low-pressure cylinders at

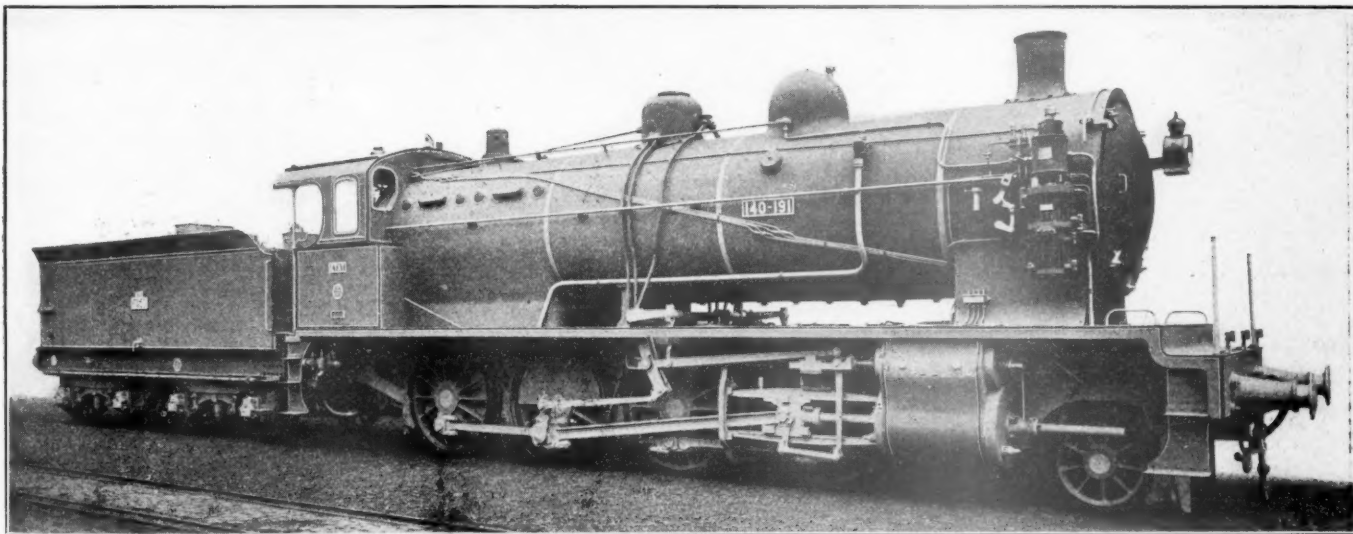


French State Railways Four-Cylinder Compound Pacific Type Passenger Locomotive

which, according to French notation, which takes account of axles instead of wheels, is known as the 2-3-1 type. The high-pressure cylinders are 16 17/32 in. in diameter and the low-pressure 25 3/16 in. in diameter, the stroke in both cases being 25 19/32 in. The high-pressure cylinders are outside the frames back of the saddle casting

low speeds with high-pressure steam. The valve gear of both high and low-pressure cylinders is of the Walschaert type.

The bearings of the coupled axles are 8.66 in. in diameter, the length being 9.25 in. in the case of the front axle and 9.45 in. in the case of the second and third axles. The high-pressure crank pins have bearings 5.11 in. in diameter by



Consolidation Type Freight Locomotive for the French State Railways

and the connecting rods drive on the second coupled axle. These cylinders are provided with piston valves and with a by-pass which is actuated by pneumatic gear coupled to the throttle handle. The low-pressure cylinders are inside the frames and their connecting rods drive on to the front

5.51 in. long, while the cranks of the crank axle on which the low-pressure pistons act have bearings 9.05 in. in diameter with a length of 5.51 in. The boiler has a barrel 5 ft. 9 1/4 in. in diameter outside at the back ring, while the length between tube plates is 19 ft. 4 5/16 in. The firebox shell is

10 ft. 2 in. long at the bottom, 3 ft. 11 3/8 in. wide at the front end where it has to pass between the frames, and 6 ft. 10 5/8 in. at the back. The roof of the firebox shell is of the round top pattern and is directly stayed to the crown of the inside firebox by screwed stays. The inner firebox is of copper and the stays are also of copper, except above the brick arch, where they are of a manganese alloy. The boiler tubes are of solid drawn steel. The grate is of the finger-bar, rocking type, with a drop section at the front end. The engine is fitted with a top header superheater which has 24 elements and is fitted with a Fournier pyrometer.

The general fittings of the engine include Lethuillier-Pinel safety valves, Detroit sight-feed lubricator and Flaman speed indicators. The front and rear drivers are fitted with a Leach pneumatic sander, while a hand sander is provided for the centre pair of drivers. A train-heating apparatus of the combined steam and compressed air type is included in the fittings. The buffing gear between the engine and tender is of the Roy type, this being also used in the case of the freight locomotive.

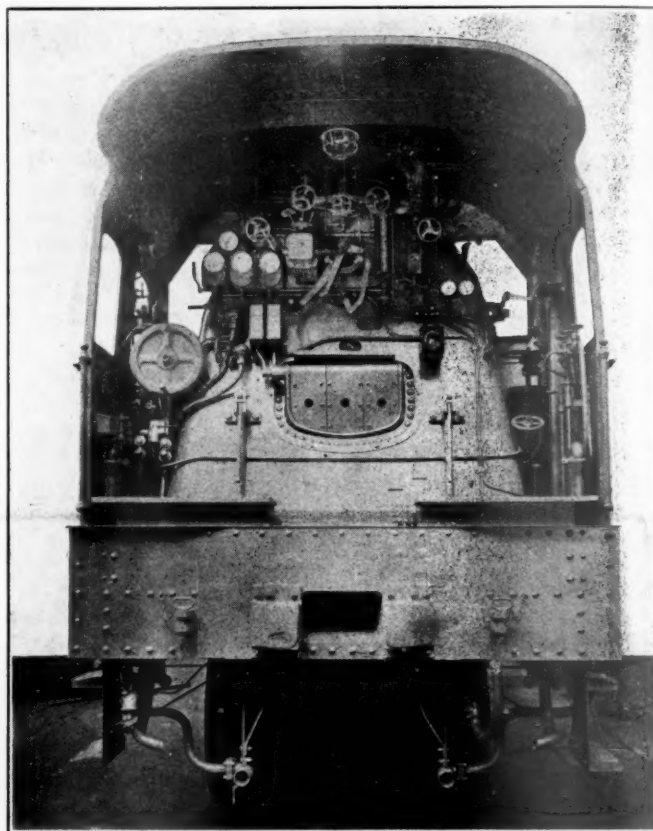
The bearing springs are under-hung, and compensating beams are provided between the coupled axles and between the rear axle and the trailing truck. The tender has a tank capacity of 5,400 gal., and carries 6.6 tons of coal.

With an effective pressure per sq. in. on the pistons equal to 50 per cent of the boiler pressure, the engine can exert a tractive effort of 20,760 lb. The boiler pressure is 227 lb. per sq. in.

The freight locomotives are each of the simple two-cylinder Consolidation type (1-4-0 by French notation), having outside cylinders 23 3/4 in. in diameter by 25 9/16 in. stroke, the connecting rods being coupled to the third pair of drivers. The cylinders are fitted with piston valves and are provided with a by-pass which is operated by a pneumatic cylinder and directly controlled by the throttle handle. The piston rods and tail rods are fitted with United States air-cooled packings, and the valve gear, as in the passenger engines, is of the Walschaert type.

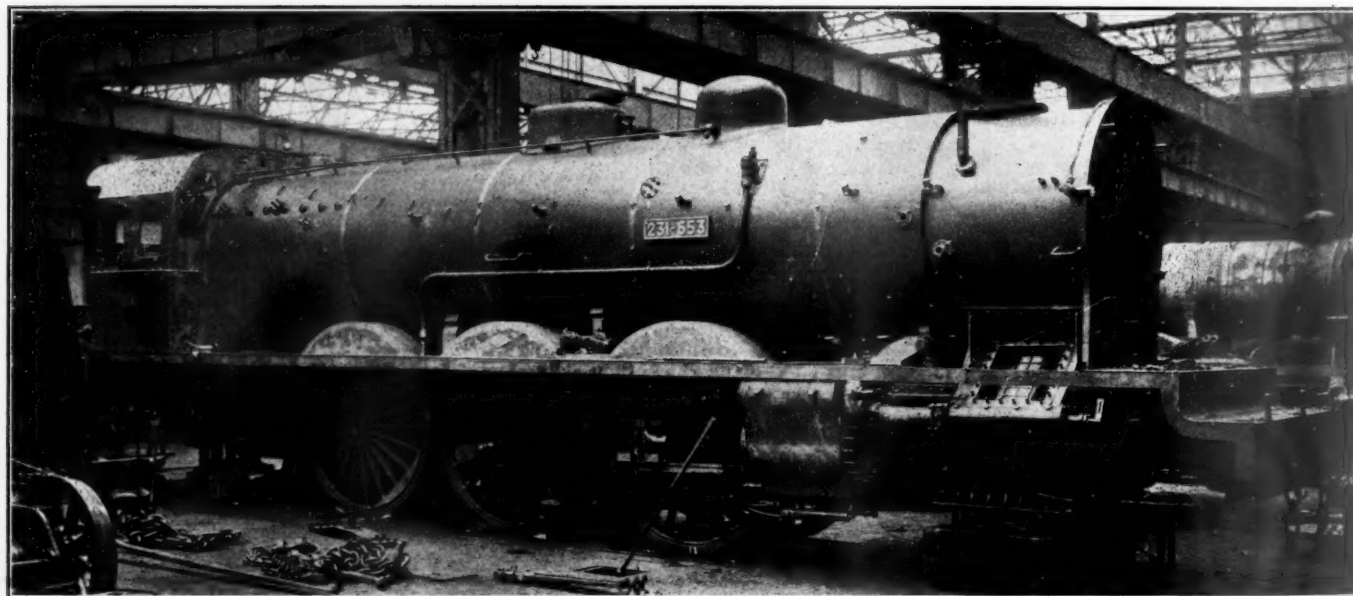
The truck is of the Zara type, the framing or cradle being pivoted at its rear end on the transverse equalizing spring of the leading drivers. The weight carried by the truck is

to the leading pair of drivers. The springs of the truck are arranged above the journal boxes, as is also the transverse spring of the leading drivers previously referred to. The remaining springs are under-hung, and they are equal-



Interior View of the Cab of the Pacific Type Locomotive

ized throughout. The coupled axles have bearings 8.26 in. in diameter by 9.84 in. long, while the bearings of the truck axle are 5.7 in. in diameter by 10.23 in. long. The journal



One of the Pacific Type Locomotives in Process of Construction, Showing the Location of the Low Pressure Valve in the Cylinder Saddle

taken by swing links on the cradle at a point between the leading driving axle and the truck axle, the effect being that a lateral movement of .43 in. is allowed in each direction

boxes are fitted with Perfection packing, a mixture of woolen waste, hair and asbestos. The main crank-pin bearings are 5.7 in. in diameter by 6.69 in. long.

The boiler has a barrel 5 ft. 7 $\frac{3}{8}$ in. in diameter inside at the front end, and 14 ft. 9 $\frac{1}{4}$ in. long between tube plates. The firebox shell is 10 ft. 10 in. long outside at the bottom and 3 ft. 11 $\frac{1}{4}$ in. wide. As in the case of the passenger engine, the firebox shell is of the round top type, the inside firebox is of copper, and the tubes are of steel, solid drawn. The boiler is fitted with the Robinson superheater.

These freight locomotives are capable of exerting a tractive effort of 14,125 kilos (31,140 lb.) when working with a mean effective pressure on the pistons equal to 75 per cent of the boiler pressure, which is 170 lb. per sq. in. Both types were constructed by the North British Locomotive Company, Limited, of Glasgow, Scotland.

The more important data relative to both the passenger and freight locomotives is given in the following table:

General Data		
	4-6-2	2-8-0
Gage	4 ft. 8.6 in.	4 ft. 8.6 in.
Service	Passenger	Freight
Fuel	Bit. coal	Bit. coal
Tractive effort*	25,800 lb.	35,250 lb.
Weight in working order	212,800 lb.	165,400 lb.
Weight on drivers	127,100 lb.	145,500 lb.
Weight on leading truck	49,600 lb.	19,900 lb.
Weight on trailing truck	36,100 lb.	.....
Weight of engine and tender in working order	328,600 lb.	264,700 lb.
Wheel base, driving	13 ft. 5 7/16 in.	16 ft. 8 13/16 in.
Wheel base, total	35 ft. 9 3/16 in.	24 ft. 11 1/4 in.
Wheel base, engine and tender	64 ft. 3 3/8 in.	53 ft. 7 3/4 in.
Ratios		
Weight on drivers ÷ tractive effort	4.9	4.1
Total weight ÷ tractive effort	8.2	4.7
Tractive effort × diam. drivers ÷ equivalent heating surface†	596.2	826.7
Equivalent heating surface† ÷ grate area	72.1	71.7
Firebox heating surface ÷ equivalent heating surface† per cent	5.4	7.5
Weight on driver ÷ equivalent heating surface†	48.4	60.2

Total weight ÷ equivalent heating surface† ..	65.9	68.4
Volume both cylinders (equivalent simple) ...	7.4 cu. ft.	12.6 cu. ft.
Equivalent heating surface† ÷ vol. cylinders ..	448.2	192.3
Grate area ÷ vol. cylinders	6.2	2.7
Cylinders		
Kind	Compound	Simple
Diameter and stroke	16 17/32 in. and 25 3/16 in. by 25 19/32 in.	23 1/2 in. by 25 9/16 in.
Valves		
Kind	H. P., Piston; L. P., Slide	Piston
Wheels		
Driving, diameter over tires	76 3/8 in.	56 11/16 in.
Driving journals, front, diameter and length ...	8 21/32 in. by 9 1/4 in.	8 3/4 in. by 9 13/16 in.
Driving journals, others, diameter and length ...	8 21/32 in. by 9 7/16 in.	8 3/4 in. by 9 13/16 in.
Engine truck wheels, diameter	37 13/16 in.	33 3/4 in.
Trailing truck wheels, diameter	48 3/8 in.	.....
Boiler		
Style	Straight top	Straight top
Working pressure	227 lb. per sq. in.	170 lb. per sq. in.
Outside diameter of first ring	66 3/8 in.	68 13/16 in.
Tubes and flues, length ..	19 ft. 4 5/16 in.	14 ft. 9 3/16 in.
Heating surface, tubes and flues	2,105 sq. ft.	1,647 sq. ft.
Heating surface, firebox ..	177 sq. ft.	182 sq. ft.
Heating surface, total ...	2,282 sq. ft.	1,829 sq. ft.
Superheater heating surface	683 sq. ft.	393 sq. ft.
Equivalent heating surface†	3,307 sq. ft.	2,418 sq. ft.
Grate area	45.9 sq. ft.	34 sq. ft.
Tender		
Tank	Water bottom	Water bottom
Weight	115,800 lb.	99,300 lb.
Wheels, diameter	37 13/16 in.	37 13/16 in.
Water capacity	5,400 gal.	4,750 gal.
Coal capacity	6.6 tons	5.5 tons

* Calculated in accordance with American practice.

† Equivalent heating surface = total evaporative heating surface + 1.5 times the superheating surface.

Doings of the United States Railroad Administration

Effects of the Signing of the Armistice; the Railroads in Congress; New Wage Orders

THE first effect on the railroads of the cessation of hostilities will be felt in some reduction of the pressure for rush transportation. One of the first acts of the government after the signing of the armistice was to cancel outstanding draft calls, which together with a reduction of the number of troops to be sent overseas will bring about a reduction in the demands on railway facilities for the movement of men and supplies. Activity in the manufacture of munitions will gradually cease and hundreds of contracts for army supplies will be cancelled, thereby reducing the pressure on transportation facilities. The cessation of activity on war contracts will also release an additional amount of steel and other materials for railway uses and there will be no more draft calls to increase the shortage of labor. Registrants from 37 to 45 years of age will not be classified.

The War Industries Board began on Tuesday a modification of the restrictions whereby it has controlled American industry in the interest of the war program by announcing a list of commodities in respect to which the curtailment of production is modified to permit the resumption of activities by 42 classes of so-called non-essential industries to an extent of 50 per cent of their former activity. This will make possible a considerable increase in the traffic in these commodities to take the place of the war commodities as their production is decreased. The Fuel Administration also ordered removal of limitations on the use of fuel in the production of build-

ing materials. The order of the War Industries Board also removed the requirements of permits and licenses from a considerable list of construction projects, including all buildings, structures, roadways, plant facilities or other construction projects of every nature whatsoever undertaken by the Railroad Administration or by any rail or water transportation company, organizing or utility, where they are under the direction of the administration or by the American Railway Express Company. The priorities division will, so far as practicable, assist industries in procuring materials, fuel, transportation and labor to enable them to increase their operations to normal limits as rapidly as conditions may warrant. Precedence will be given to such activities as will tend to provide for deferred maintenance, additions, betterments and extensions of railroads, telegraph and telephone lines and other public utilities and to promote and stimulate intensive development of inland waterways.

It was officially stated at the office of the Railroad Administration that no reductions of the freight and passenger rates or of wages which have been increased during the period of the war are to be expected in the immediate future, but that consideration is being given to the possibility of eliminating the extra fare of one-half cent for Pullman passengers.

The Railroad Administration expects to be able now to turn its attention toward developing business in order to keep

up its revenues, instead of turning it away, and an improvement in passenger accommodations is expected. Several additional trains have been put in service recently and this policy is to be continued. Arrangements have been made to care for the usual winter travel to Florida and California.

As far as the railroads themselves are concerned the question of their disposition is not immediately pressing because the federal control law provides a period of 21 months after the peace proclamation. It also provides that the President may relinquish the roads before that time but if anything is done toward returning the roads to their owners it is more likely to come as a result of congressional action. There is a strong tendency in Congress toward the return of the roads to private management and a movement in that direction will doubtless be started at once if there is an extra session in the spring and the new Republican Congress takes the floor. This will take the form of the introduction of bills to repeal the federal control act. Senator Cummins of Iowa and Representative Esch of Wisconsin will head the interstate commerce committees of the two houses under the new line-up and both of them have serious objections to some of the things done by the Railroad Administration.

The advocates of government ownership are also expected to become active shortly, and it is understood that bills have already been prepared toward this end by Senator Cummins providing for government ownership, but proposing leasing to private corporations for operation and by Senator Norris providing for ownership and operation by a corporation representing the government.

The convention of the state and federal commissioners this week also indicated that the termination of hostilities abroad is likely to result in the renewal of domestic controversies regarding the railroads and to remove some restraint on criticism of the Railroad Administration that have been withheld during the war.

A bill to amend section 10 of the federal control act in order to restore to the Interstate Commerce Commission its former jurisdiction over railroad rates was introduced in the Senate by Senator Cummins on Monday shortly after the signing of the armistice terminating the war was announced. While the act now gives the commission the power of final review of rates initiated by the President, the proposed amendment would authorize the commission to suspend such rates before their effective date.

Weekly Report of Traffic Conditions

The weekly summary of traffic conditions in the various regions made public by Director General McAdoo on November 13 continues to reflect generally favorable transportation conditions in various parts of the country, although the effect of the influenza epidemic is still being felt in some places and shortages of labor and of cars are reported in some localities. As the lake season approaches a close, cross-lake routes are being used for the relief of the Chicago gateway. The consolidated ticket office program for the entire eastern region has been completed. The joint use of the Southern Pacific and Western Pacific tracks in Nevada has been made effective, using the Western Pacific eastbound and the Southern Pacific westbound. There has been no serious complaint of shortage of grain cars except in Illinois, Ohio and Indiana and the Car Service Section is arranging to provide relief.

Mechanical Committee to Consider Car Designs

The committee on standard appliances for cars and locomotives holds its regular monthly meeting at Washington on November 19 and will give attention to the designs for the 375 passenger coaches and the 129 combination cars which it is proposed to order. The drawings for the 60-foot and 70-foot baggage cars and for the 2,000 hopper cars for the Virginian are now in the hands of the purchasing committee.

Accounting Rules for Water Carriers

Director General McAdoo has issued General Order No. 52 prescribing rules and regulations for the accounting of transactions of water carriers under federal control.

Signal Supervisors Classed as Officials

The Railroad Administration announces that Director General McAdoo has decided that signal supervisors and assistant signal supervisors shall be considered as officials and that therefore, their compensation shall be fixed by the director general on the recommendation of the regional directors. The director general had previously made a similar decision as to train dispatchers, yardmasters, master carpenters, superintendents of bridges and buildings, claim agents and other classes of supervising officials, and in many cases increases in salaries have been made by the action of the regional directors and federal managers with the approval of the director general. Such a decision by the director general removes consideration of the salaries of such supervising officials from the jurisdiction of the Board of Wages and Working Conditions, which makes recommendations to the director general on employees' wages. Protests were made by the Switchmen's Union and the Brotherhood of Railroad Trainmen against negotiations by the regional directors direct with the yardmasters without recognizing the organizations of which many of them are members.

McAdoo Asks Railroad Men to Support War Work Campaign

Director General McAdoo addressed the following appeal to the American army of railroad men for support of the United War Work campaign:

"A great united war work campaign will begin on Monday, November 11, to obtain funds which are urgently needed to carry on the beneficent war work which is being patriotically performed in behalf of our army and navy by the Young Men's Christian Association, Young Women's Christian Association, National Catholic War Council, Jewish Welfare Board, War Camp Community Service, American Library Association and Salvation Army.

"The workers of these organizations have gone to the front and shared the dangers and hardships of our soldiers and sailors. Through their tireless energy, thoughtfulness and devotion they have carried cheer and comfort and assistance to our men fighting in the trenches and on the high seas, as well as to those in training camps here and abroad. The splendid work of these organizations has been officially recognized by the American government and they are worthy of the support of every loyal American. Every individual who can afford to do so ought to give aid by making the most liberal possible contribution.

"The service that each of these great organizations renders is distinct in that it has reference to the peculiar needs of those who differ in their religious beliefs or preferences, but this is a distinction without a difference for all seven organizations are inspired by the same ideals of helpfulness and imbued by a common desire to make the gospel of Faith, Hope and Love a reality to the men who are fighting for humanity. This unity of purpose is expressed in the unity of the appeal that is now being made to the people of the United States and I urge that every railroad employee shall respond to it generously and even to the point of foregoing the things that he can do without that those who are away from home and suffering may be cared for and comforted, and feel that they are forgotten while they are 'Over There,' whether they are fighting or engaged in the work of reconstruction that must follow the war."

Data Requested for Maintenance Record

For the purpose of making a record of the amount and character of maintenance of way work performed on the railroads during federal control and during the three-year period ending June 30, 1917, in order to comply with the provisions of the federal control law requiring that the railroads be returned to their owners in substantially as good condition as when they were taken, the Division of Operation has issued circular No. 22 directing the roads to send to C. A. Morse, assistant director of the division in charge of engineering and maintenance, the following information, not later than December 31, 1918, as to each property for the fiscal years ended June 30, 1915, 1916 and 1917, and also the calendar year 1918:

1. Name of corporate companies, comprising each property, that make separate annual reports to the Interstate Commerce Commission, with their principal terminal limits and total miles of road.

2. List of operating divisions separated as between main and branch line mileage and side track mileage. Where there is more than a single main or branch line main track, mileage should be given separately for each additional main track. The termini limits of the main lines should be stated. If a division includes portions of two or more corporate companies, information should be divided to cover each corporation.

3. Gross ton-mile freight traffic and car-mile passenger traffic, by divisions, divided into main and branch line traffic, to be given separately for each of the four years.

4. Division charts to be furnished for main and branch lines showing rail in each main track December 31, 1917, with year laid, kind, section, weight per yard, and whether new or relayers when laid. Charts should be 8 by 10½ in., or multiples for folding to that size, with 1 in. on left side for binding.

5. Division charts to be furnished for main and branch lines showing ballast in each main track December 31, 1917, with kind and depth of ballast. Charts should be 8 by 10½ in., or multiples for folding to that size, with 1 in. on left side for binding.

6. How many cubic yards of ballast of each kind inserted on each division during each of the four years, divided as between that charged to additions and betterments and that charged to maintenance, separated as follows:

- a. Main lines.
- b. Branch lines.
- c. Sidings.

7. A. How many cross ties were inserted on each division during each of the four years separated into kinds of wood, sizes, treated and untreated, divided as follows:

- a. Main lines.
- b. Branch lines.
- c. Sidings.
- d. New work.

B. How many feet B. M. switch ties were inserted on each division during each of the four years separated into kinds of wood, treated and untreated, divided as follows:

- a. Main lines.
- b. Branch lines.
- c. Sidings.
- d. New work.

C. How many tie plates were inserted on each division during each of the four years, divided as follows:

- a. Main lines.
- b. Branch lines.
- c. Sidings.
- d. New work.

D. How many anti-creepers were inserted on each division during each of the four years, divided as follows:

- a. Main lines.
- b. Branch lines.
- c. New work.

8. All information to be furnished on paper 8 by 10½ in., using separate sheets for answering each of the questions, and the data for each railroad to be bound together with suitable paper covers with name of road, etc., on front and bound on 10½-in. side.

Repairs to Refrigerator Cars

The mechanical department of the United States Railroad Administration has issued Circular No. 7 covering repairs to refrigerator cars. This circular requires that refrigerator cars having trucks of 60,000 lb. capacity or over will, when receiving general repairs or being rebuilt, be made to conform to the United States standard refrigerator car requirements. This affects the general arrangement, ice box, hatch arrangement, well trap, drain pipe, floor and walls, floor racks and doors, fastenings and cushions.

Van Dycks of the prints covering these requirements will be furnished each railroad on application to Frank McMamamy, assistant director, Division of Operation. The railroads are also requested to send blue prints of cars which do not meet the specifications of the mechanical department, with the following information:

- (a) Number of cars owned that will need to be changed to meet the requirements.
- (b) Estimated cost of making the changes.
- (c) Location of shops where cars will receive such changes.
- (d) Number of cars that can be changed monthly at each shop.
- (e) Number of cars that can be changed in all shops per month.
- (f) Length of time that it will require to make changes on all cars owned.

All railroads owning refrigerator cars are requested to arrange immediately to apply floor racks in accordance with the standard specifications, where they have not already been so equipped. It is requested that a monthly report be furnished the general supervisor of car repairs at Washington, showing the number of cars equipped with floor racks, those equipped with similar racks and the number remaining to be equipped.

Bad-Order Car Situation

As a continuation of the weekly statement of car condition reports published in the *Railway Age* of October 25, page 748, the following three weeks' report is given, together with the percentage of bad order cars by regions, for four weeks ending October 12. It will be noticed that the percentage of bad order cars for all the roads under the jurisdiction of the Railroad Administration has been reduced to 5.8. For the week ending July 27 the percentage of bad order cars was 7.1. This shows a marked decrease and indicates an improvement which is particularly desired at this time.

CAR CONDITION REPORTS

	Sept. 28	Oct. 5	Oct. 12
Number of roads represented.....	137	140	139
Total revenue cars.....	2,484,491	2,492,862	2,448,437
Bad order cars.....	149,520	145,686	142,965
Heavy repairs.....	89,357	85,776	84,308
Light repairs.....	60,163	59,910	58,657
Percentage of bad order cars.....	6.0	5.8	5.8
Average bad order cars repaired per working day.....	97,863	94,840	92,583
Heavy repairs.....	10,737	10,203	9,922
Light repairs.....	87,126	84,637	82,661
Number of cars transferred to other shops.....	3,780	4,845	4,947
Number of employees.....	145,328	145,242	143,902

PERCENTAGE OF BAD ORDER CARS BY REGIONS

	Oct. 12	Oct. 5	Sept. 28	Sept. 21
Eastern.....	6.3	6.4	6.7	7.0
Allegheny.....	7.1	6.7	7.0	7.1
Poahontas.....	6.1	5.5	5.3	5.4
Southern.....	5.1	5.0	5.1	5.1
Central Western.....	5.3	5.3	5.2	5.2
Southwestern.....	3.2	3.1	3.1	3.2
Northwestern.....	5.8	6.3	6.5	6.6
All regions.....	5.8	5.8	6.0	6.2

Locomotives to Be Stored at Strategic Points

In order to provide a reserve of power in the congested districts in the eastern section of the country the Railroad Administration has arranged to store 50 of the new standard locomotives at Potomac yards, just outside of Washington, D. C., and 110 in the vicinity of Cleveland, Ohio. It is the aim of the administration to hold these locomotives to clear up any blockades that may occur during the winter.

McAdoo Not Moved by Strike Threat

Threats of representatives of the Order of Railroad Telegraphers in the South to call a strike unless their request for additional increases in wages was passed upon by Thursday of this week, elicited from Director General McAdoo the following statement to railroad telegraphers:

I regret to learn that efforts are being made by some persons to induce telegraphers in the railroad service of the United States in certain sections of the country to strike on the fourteenth of November unless the director general makes a decision before that date on the request of the telegraphers for increased wages. I cannot believe that genuinely patriotic men will listen for a moment to advice from anyone to strike against the government of the United States. All employees of the railroads are now in the service of the government and never in the history of the United States have its employees struck against their government. It is impossible for the director general to render a decision on the telegraphers' claims on or before November 14. The case is under consideration and will be decided at the earliest possible moment. A grave mistake will be made if any body of employees should quit their posts. It is just as essential now to keep a continuous flow of supplies to our soldiers and sailors in France as it was while the war was actually raging. I earnestly request each patriotic employee to remember his duty to his government and to remain at his post and await with confidence the action of the director general which will be taken at the earliest possible moment. In this hour of glorious triumph for world democracy let us not fail to do our part by standing to our posts as our soldiers and sailors have so gallantly stood to theirs.

The petition of the telegraphers for further increases in addition to those granted by General Order No. 27 was considered by the Board of Wages and Working Conditions, and its recommendations are before the director general for a decision.

Other Wage Controversies Settled

In General Order No. 53 the director general approves an understanding reached between the regional directors and the officers of the organizations of telegraphers, switchmen, clerks and maintenance of way employees providing for the organization of Board of Adjustment No. 3 to adjust con-

troubles growing out of the interpretation or application of wage schedules similar to Boards No. 1 and No. 2 previously organized.

The director general has issued General Order No. 54 providing a method of settling disputes between the express company and its employees involving questions other than wages and working conditions which are to be referred to the Board of Wages and Working Conditions. In case an agreement is not reached with the officers of the company in the usual way the cases shall be transmitted to the director of the Division of Labor. This arises from a strike of some 600 express employees on a question of jurisdiction.

The threatened strike of telegraph operators in the south-east ordered for Thursday unless an order for increases in wages was forthcoming was called off after receiving a statement from Director General McAdoo saying that the order would not be issued by that time.

More Compensation Contracts Ready

Compensation contracts between the Railroad Administration and the Baltimore & Ohio and Atchison, Topeka & Santa Fe are nearly ready for signature by the director general and the first of the contracts with the short line roads also is expected to be signed this week.

Orders Issued by the Regional Directors

A Wide Variety of Subjects Are Considered Involving Many Phases of Operation

MAINTENANCE OF AIR BRAKE APPARATUS.—Order 500-62A225 of the Eastern regional director invites special attention to the need of following up the observance of M.C.B. Rule No. 60, relative to the maintenance of triple valves and air brake equipment.

Dining Car Rates for Postal Clerks.—Order 200-4-69A224 of the Eastern regional director states that the uniform charge of half rate for trainmen and Pullman employees in dining cars should include Railroad Postal Clerks engaged in service on the trains to which dining cars are attached.

Discontinuance of Mileage Charge for Electric Car-Lighting Equipment.—Order 500-60A218 of the Eastern regional director refers to M.C.B. Rule 10, code of passenger car rules, which covers charges for electric car-lighting equipment. As between roads under federal control, the payment of such charges has been discontinued by Section 1, Item 1 of General Order No. 31 from the Director General.

Employment of Women for Calling Train and Engine Crews.—Order 3000-441 of the Eastern regional director states that there has been some complaint about the use of women for calling train and engine crews. The service requires that the caller must find the train or engine man for whom he is looking, who is often asleep either at his home, hotel, boarding-house or caboose, where he must be awakened and his signature secured as acknowledging the call. The service is, therefore, considered as unsuitable for women and they should not in any case be so employed.

Nine Hour Day for Maintenance of Way Forces.—In Order 113 the Southwestern regional director announces that maintenance of way forces, including sections and extra gangs, the bridge and building department, and other departments of the maintenance of way service will work under a nine hour day, effective November 11.

Car Supply for Government Hay.—In Supplement 1 to Circular 35, the Northwestern regional director announces that the orders issued by the assistant chief of the Inland Traffic Service of the war department at Chicago for cars required for the loading of hay and straw for government account, will hereafter be sent to the shipper and will be his authority for ordering cars from the railroad agent for government loading. A copy of each order will continue to be sent to the transportation officer of the road on which the cars are to be loaded. Under the previous practice the orders were sent direct to the railroad agent at the loading point.

Rental for Cars Used in Inter and Intra-plant Switching.—In Order 114 the Southwestern regional director states that in a discussion looking to the adoption of a uniform rule governing the use of railroad cars by industries in plant

switching and making a charge therefor, the decision was reached that while it is improper for a plant to use railroad equipment for its own intra-plant purposes, the difficulties of policing where plants perform their own switching are almost insuperable under present conditions and would be more expensive than results would justify. Therefore, to avoid the use of good equipment by plants which are utilizing railroad equipment freely for intra-plant purposes, railroads are requested to handle the matter with a view of substituting some equipment of their own or leasing them equipment of railroad ownership which is unfit for road service on some reasonable basis.

Yardmasters Wanted for Foreign Service.—In a circular dated November 2, the Central Western regional director announces the receipt of a telegram from S. M. Felton, director general of military railways, calling for 200 yardmasters and 75 assistant yardmasters for foreign service, whose rank will be that of 2nd Lieutenant. Candidates will advise the director general of military railways, Washington, direct of their names, occupations, draft status and the address of their local draft boards.

Movement of Oil.—In Supplement 4 to Circular 72 the Northwestern regional director announces that the train-lot method of handling oil which was first introduced in April, was adopted by the Chicago & North Western at the Casper (Wyo.) oil fields, effective November 11.

Regulations for Movement of Cotton.—In Supplement 2 to Order 82 the Southwestern regional director announces that the Western Weighing and Inspection Bureau has been authorized to inspect and check cotton in Arkansas and Louisiana. The duty of the bureau is to check cotton into the compresses, certifying to the agents the number of bales received and examining them for country damage; to check outbound compressed cotton for country damage on the same general lines that govern the Maritime Association at ports; to certify conditions to the agent before bills of lading can be signed, enforcing the rule as to minimum loading and keeping a record of the number of bales topped; and to maintain a force at ports to check cotton for delivery to steamships against the Maritime Association. The bureau inspector at each press will keep in close touch, through the railroad agent, with the amount of cotton for daily delivery to each press, and will notify superintendents of the railroads as soon as the situation at the press threatens to become congested, thereby giving the superintendents time to make their own investigations and to issue embargoes if necessary.

In order that each agent at a compress point may know

what cotton is enroute for each press the superintendents will arrange to notify the agent daily of the approximate number of bales signed for the previous day for delivery to the press. The expense in Texas and Oklahoma will continue to be divided between the several roads on the basis of the number of bales handled and the bureau is authorized to assess the new expense in Louisiana and Arkansas on the same basis.

Shippers' Export Declaration.—In Order 110 the Southwestern regional director and in Order 3000-440 the Eastern regional director calls attention to recent complaints on the part of the U. S. Treasury Department to the effect that the railroads and the American Railway Express are not complying with the amended regulations regarding shippers' export declarations, which provide that shippers shall prepare and sign four copies of a declaration if the goods are destined to foreign ports and two copies if destined to non-contiguous territories of the United States. Receiving agents must not accept shipments for export unless the regulations, referred to, have been complied with.

Disposition of Stored Material.—In Supplement 1 to Circular 44 the Northwestern regional director requests the roads under his jurisdiction to report promptly to T. C. Powell, manager of inland traffic, Washington, D. C., any accumulation of stored freight in warehouses, on tracks, piers, etc., at ports and interfering with railroad operation. It was recently decided that the responsibility for disposing of the large quantities of inert stores purchased largely for export, shall rest upon the Commodity Sections of the War Industries Board. The co-operation of the railroads in notifying the board of freight which should be disposed of, is therefore solicited. Hereafter reports will be sent at least monthly to Mr. Powell, and copies of them to the regional director.

Issuance of Free Transportation to Directors and Officers of the Corporations.—Order 1600-1A229 of the Eastern regional director quotes from a letter from Director of Operation Gray to the chief executive officer of each of the corporations for railroads under federal control, as follows:

With respect to the matter of railroad transportation for officers of the corporations: It has been decided that passes will be issued upon your request, for directors and for officers who are assigned to work on the line, which transportation will be good over the railroad owned by your company.

In addition to this, the chief executive officer will be furnished an annual pass over a much larger territory, and the vice presidents, where they devote substantially their entire time to the business of the corporation, will be given transportation good over all lines in the region in which the railroad owned by your company is located.

Issuance of Free Transportation.—Order 1600-1A215 of the Eastern regional director states that the following decisions have been reached by the U. S. Railroad Administration with respect to the issuance of free transportation:

It has been decided that the past practice in connection with Post Office Commissions shall be continued for the year 1919.

It has been decided that for the year 1919 a certain amount of annual transportation will be issued by the Railroad Administration good over all lines under federal control within a designated region. Revision of pass circulars or regulations by individual railroads should provide adequate instructions to conductors and others interested in establishment of this plan.

Exchange of Transportation with Canadian Railroads.—It is not the intention to discontinue or curtail the exchange of transportation with Canadian railroads. It will be proper to exchange trip transportation direct with Canadian railroads; also to request direct such annual transportation as your officers or employees require over Canadian roads. Canadian railroads, however, will send their requests for such annual transportation as they may need over federal controlled roads to the Director of the Division of Operation at Washington, who will furnish one pass to cover each individual's requirements.

It has been the custom in the past for railroads to furnish transportation to mechanical experts inaugurating service or giving attention to the maintenance and operation of certain specialties such as superheaters, electrical headlights, stokers, air brake equipment, etc. It will be proper for the federal managers and general managers to continue this practice, issuing transportation for such limited periods and covering such territory as may be necessary for these various exports to carry on their work.

Military Meals on Dining Cars.—Order 1200-4-69A221 of the Eastern regional director quotes from a letter from Edward Chambers, Director, Division of Traffic, as follows:

At a recent conference with the several military departments, an understanding was reached whereby the so-called military meal (breakfast, luncheon and dinner) would be served at 75 cents per meal, to all officers and enlisted men in uniform (with the exception noted below), including the selective draft men wearing arm brassards, whether payment is made by meal order or by cash.

Exception: There are a number of nurses and enlisted women in the Army, Navy and Marine Corps, who are not required by military regulations to wear street uniforms; nevertheless, they have a recognized military standing and should be accorded the privilege of purchasing military meals at 75 cents, provided they present for inspection furlough papers or other official documents clearly establishing their military status at time of entering car.

Menus typical of the meals that will be provided were submitted to, and received approval of the military authorities.

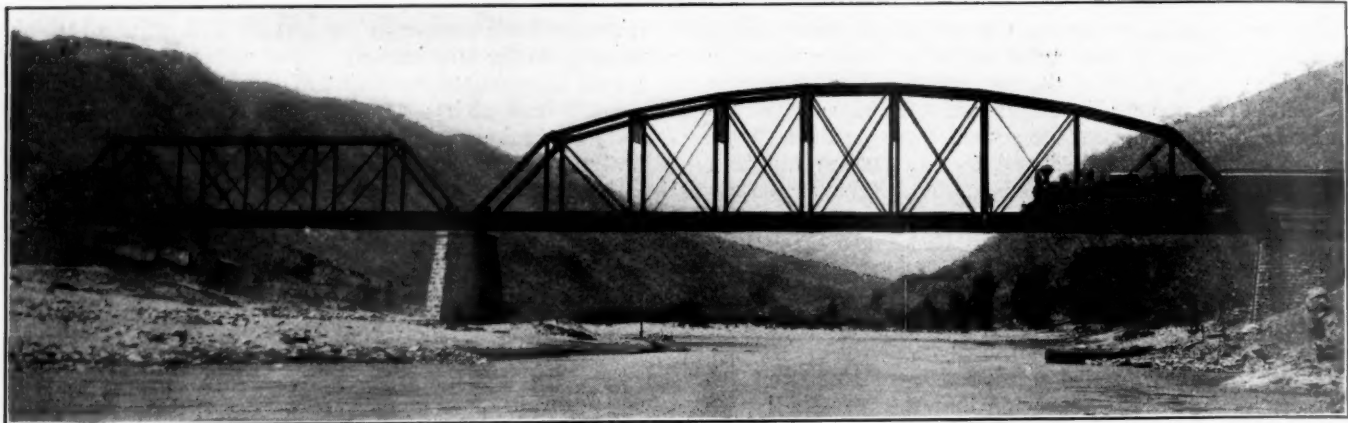
In order to insure uniformity of service and compliance with the requirements of the Army and Navy as to the character of the ration, the Inter-regional Dining Car Committee has been directed to supervise the installation of this plan.

Fuel Conservation.—Circular of Central Western regional director dated November 6—same as Circular 128 of the Southwestern regional director and Order 3000-434 of the Eastern regional director. See page 826, *Railway Age* of November 8.

Commissioners Desire Assertion of Jurisdiction of State Commissions

THE National Association of Railway and Utilities Commissioners at its session Thursday unanimously went on record in favor of asserting the jurisdiction of state commissions over intrastate affairs and the early determination of the future status of railroads, by adopting a resolution, which called attention to the fact that the war has closed, expressing the opinion of the association that suitable action should be taken by the Director General or the President to recognize the full and unimpaired authority of the states over intrastate rates, service and facilities of carrier properties under federal control, but that in any event it is the duty of each State Commission to exercise and maintain its constitutional and statutory authority to extend which it may deem the public interest demands, taking into account, as factors in any determination reached, the present status of the railroads and the responsibilities of the treasury and the desirability of achieving results by friendly co-operation wherever possible. It was also resolved that consideration ought to be given by the President and Congress to legislation defining the future status of the railroads and that the association is emphatically of the opinion that any plan for future operation of railroads should safeguard the powers of local tribunals responsible to the people of the several states with respect to matters essentially intrastate in character.

The Committee on Car Construction of the Master Car Builders' Association has sent out Circular 19 to members asking for suggestions for the modification of the methods outlined in Rule 22 of the interchange rules for the splicing of car sills. Recommendations are to be sent to W. F. Keisel, Jr., Pennsylvania Railroad, Altoona, Pa.



A Scene from El Gran Pacifico Railway in the State of Guerrero. Photo Courtesy of Pan American Union

Mexico as a Potential Market for Railway Supplies

A Statistical Study of Our Trade in Such Material with That Country. Prospects for the Future

By Edward Scott Swazey

THE INTEREST OF RAILWAY MEN in the construction and reconstruction of Mexico's railways is inevitably linked up with the restoration of normal business and investment conditions in that country.

The report on Mexican railways by the Latin-American Division of the Bureau of Foreign and Domestic Commerce, published in the *Railway Age* of August 16, describing the location and development of the principal roads and assembling some of the scanty data available regarding present conditions, serves to remind us of the great future market in

play in Mexico's trade and development is absolutely predicated upon a proper understanding of conditions there.

In the railway field Mexico now signifies to the investor the reestablishing of the security of the old capital and the employment of new capital; to the manufacturers of supplies it means the reconstruction of badly damaged lines and eventually new construction, and the continuing sale of materials for maintenance; and to the operator Mexico means the movement by rail of international freight.

In 1912, according to an analysis of the government report

TABLE I.
RAILWAY MATERIALS EXPORTED FROM THE UNITED STATES TO MEXICO, 1910-1917
(Years ending June 30)

	Value								
	1910	1911	1912	1913	1914	1915	1916	1917	1918
Rails	1,916,640	1,838,585	893,758	551,576	101,705	64,633	123,652	72,341	233,798
Locomotives	412,447	623,159	121,208	85,765	42,300	45,721	314,868	579,993	†529,767
Passenger and freight cars for steam railways	391,148	1,734,717	651,768	462,236	95,424	32,192	72,899	365,673	*
For other railways	187,980	496,741	125,004	217,331	169,156	24,417	43,736	46,937	*
Car wheels	170,337	119,139	113,996	94,028	66,700	31,715	16,068	27,316	*
Sub-total	2,698,552	4,812,331	1,905,734	1,413,936	475,285	198,678	571,223	1,092,260	*
Spikes				54,540	30,483	20,819	16,499	25,808	*
Ties				399,600	327,518	144,015	168,410	409,217	*
Track material				354,570	95,543	44,336	98,229	47,971	*
Grand total of items listed				2,222,655	928,829	407,848	854,361	1,575,256	*
	Quantity								
	1910	1911	1912	1913	1914	1915	1916	1917	1918
Rails (tons)	67,929	63,812	32,459	19,979	3,119	1,874	3,609	1,750	4,118
Locomotives (number)	45	68	15	18	5	7	38	76	156
Car wheels (number)	20,951	16,125	16,141	13,698	11,141	4,215	2,373	3,259	*
Spikes (pounds)				2,812,751	1,643,286	1,196,589	583,859	624,931	*
Ties (number)				685,594	419,840	243,777	353,174	692,923	*

* Not given by country in reports so far issued.

† Figures for steam locomotives only available for 1918. Electric locomotives represented only small amounts in previous years.

the country to the south of us. It is not unreasonable that the recurrent revolutionary troubles (our war-born, almost automatic) foreign trade expansion, and of late our own war activity should have combined to nearly eliminate Mexico from our usual run of calculations of foreign trade and investment possibilities. But in looking ahead, and after reconstruction, the part which we should again be able to

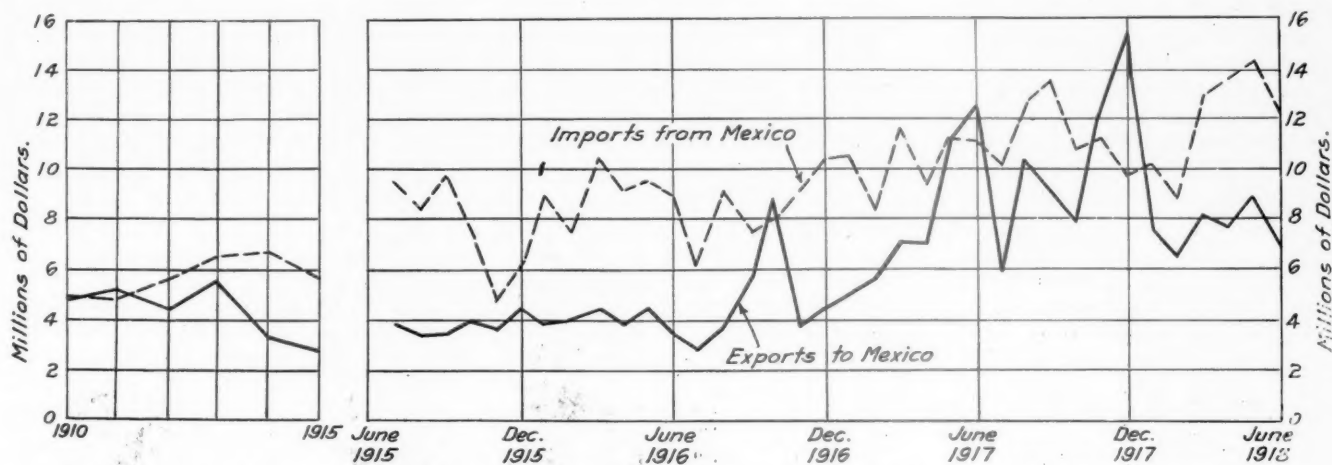
referred to above, \$557,000,000, or 60.5 per cent of all capital invested in Mexican railways was American, this same amount representing 52.6 per cent of all American capital invested in Mexico. What this equity is worth now or what it may come to be worth, it is idle to speculate. If the Mexican government retains control of the lines it may be expected that the necessity for raising additional funds will cause them to

protect at least the bondholders. If control is restored to private owners, the question of recompense for damages done becomes of prime importance.

Although railroad construction in Mexico is far from its possible state of development, attention for the next several years must be devoted to the rebuilding and reconstruction of existing lines, representing a probable outlay of over

1911 may be considered as of normal activity, with, for example, exports each year of about \$2,000,000 worth of rails, and of locomotives valued at \$500,000. During the next three years this trade fell off very considerably, though 1916 and 1917 show up somewhat better, as do the two items for which 1918 figures are available.

These figures of trade in specific articles are in themselves



Average monthly imports from and exports to Mexico for years ending June 30, 1910-1915, and by months for the last three fiscal years.

United States Trade with Mexico

\$50,000,000 (United States gold) on the basis of normal prices.

Figures to show Mexico's total imports of railway materials and supplies are not available. Rails and track material, however, averaged about \$4,750,000 for 1910 and 1911, of which 78 per cent came from the United States, 12 per cent from Great Britain and 7.7 per cent from Germany. Of the

only roughly indicative of the potential market which we know exists for these products. To what extent this potential market can be made real, depends on the general trade conditions, controlled by the status of Mexico's internal affairs and by the determination of our own traders to make the most of every possible opening. The best index of these conditions, not biased by any personal beliefs, is an analysis



A Busy Scene at Hermosillo in Sonora

\$3,000,000 worth of "railroad cars and coaches" imported (the average of the two years) 95.5 per cent came from the United States.

Our own export figures for the different classes of material are somewhat more complete for the period from 1910 to date, although some items are not in all cases classified separately. Table I shows the value of the United States' exports to Mexico of rails, locomotives, cars and certain materials, and with two exceptions the quantities also. The years 1910 and

of the actual volume of trade which has taken place between the United States and Mexico.

Going back to more or less normal years, it appears that of Mexico's total imports, averaging about \$100,000,000 (U. S. gold) yearly, 58.7 per cent came from the United States in the five-year period 1904-08, dropping to 54.9 per cent for the next five years. Great Britain's corresponding percentages were 11.8 per cent and 12.1 per cent, with Germany's increasing from 9.4 per cent to 11.9 per cent. Of the

exports from Mexico, those to the United States increased from 70.0 per cent (1904-8) to 75.9 per cent (1909-13), Great Britain taking 11.8 per cent and 11.5 per cent, and Germany dropping from 7.6 per cent to 4.1 per cent. With Germany's trade disorganized after the war, we should control 65 to 70 per cent of Mexico's imports—and these imports should increase greatly with any betterment in the economic conditions of the people—and we should take in return about 80 per cent of Mexico's exportable products.

Table II shows this Mexican trade from our own viewpoint—that is, in relation to the total United States foreign trade. Though our imports from Mexico have been only from 3.6 per cent to 4.8 per cent of our total, and our exports to Mexico an even smaller proportion (the proportion itself dropping because of the great war increase in our foreign sales), the aggregate amounts are very appreciable.*

TABLE II
UNITED STATES TRADE WITH MEXICO
(Millions of Dollars)

Years ended June 30	Total U. S. exports	U. S. exports to Mexico	Ratio, per cent	Total U. S. imports	U. S. imports from Mexico	Ratio, per cent
1908.....	1,860.8	55.5	2.9	1,194.3	46.9	3.9
1909.....	1,663.0	49.8	2.9	1,311.9	47.7	3.6
1910.....	1,745.0	58.2	3.3	1,556.9	58.8	3.7
1911.....	2,049.3	61.2	2.9	1,527.2	57.4	3.7
1912.....	2,204.3	52.8	2.3	1,653.3	65.9	3.9
1913.....	2,465.9	54.4	2.2	1,813.0	77.5	4.3
1914.....	2,364.6	38.7	1.6	1,893.9	92.7	4.8
1915.....	2,768.6	34.2	1.2	1,674.1	77.6	4.6
1916.....	4,333.5	47.9	1.1	2,197.9	97.7	4.4
1917.....	6,290.0	79.0	1.2	2,659.4	112.1	4.2
1918.....	5,928.3	106.9	1.8	2,946.1	140.8	4.8

It is interesting to note that although we have been inclined to consider that conditions in Mexico during the last three years have continued to be hopelessly chaotic, and though the difficulties in the way of doing business have been and are severe, the actual value of our exports in 1917 passed the high pre-revolutionary figure and during the year just ended this value is nearly double the normal. Even considering the higher prices of all articles, it can be said that the volume of our old export trade has practically been restored.



On the Line of the Tropic of Cancer

The accompanying chart shows the way in which this trade has varied from month to month during the last three years, the very distinct upward tendency in our exports having been checked chiefly by our own export restrictions.

The Mexico of the next fifty years at least must be dependent upon foreign capital if she is to attain any worthwhile development, and she must make it safe for that capital if it is to be obtained. Capital will probably be scarce after the war, and in particular those European countries which have in the past financed the development of the newer countries, will be largely engaged at home. Mexico cannot therefore afford to continue to antagonize the United

* Our exports to Mexico averaged \$56,000,000 during 1908-1911, dropping to a low of \$34,000,000 in 1913, while our imports for these years have increased at a fairly regular rate from \$47,000,000 to \$98,000,000 in 1916 and \$141,000,000 in the year ending last June.

States and to make it unsafe for the investors of this country to co-operate with her in her upbuilding. Whether Carranza will come to understand this, whether he will gradually become powerful enough to exercise the necessary control over the outlying sections of the country, or even to maintain the present extent of his control, is still to be seen. Certain it is that his course of action will be largely determined by our ability to counteract the pro-Germanism so deeply imbedded there. Much will be accomplished along this line by the definite defeat of Germany in the world war. It can hardly be believed that the Mexicans have any great love for Germany or things German. It is rather to be supposed that the desire has been to land on the winning side, and if the Mexicans have been deluded into believing that most



The Constitucionalist Railway Station at Queretaro

of Texas and New Mexico can be theirs if only they bother us sufficiently, they are to be pitied for their ignorance, and educated out of it. Pro-German rumor flies fast enough even in the United States, among those who read and are more or less accustomed to thinking for themselves.

The problem is as much ours as theirs. Where our capital and our enterprise properly applied can help to develop Mexico to her proper status among nations, it can also bring us our returns in increased markets for our products, in direct interest return, and in more complete Pan-American unity.

Certain it is that we must have Mexico's own best interests at heart actually and sincerely, and that we must endeavor to make them understand this. What diplomacy can do we may hope will be done; but for tangible results in the personal, as distinct from governmental sphere, we must depend on the pioneer trader to reblaze the old trails and re-establish confidence in us.



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The Station at Peronne as the Germans Left It

General News Department

Employees' Magazines, published by railroads for their employees, are to be delivered to all employees at the time when they are paid their monthly or semi-monthly wages. This is in accordance with a recent order of the director general.

Permission to lay tracks to connect with coal mines will no longer be granted by the Fuel Administration; announcement is made that applications will no longer be received at Washington, but should be made direct to the local railroad officers, as before the war.

The Alaska (Government) Railway is now completed for 211 miles from Seward, the gap of 15 miles along Turnagain Arm having recently been closed. The first train through to Anchorage carried Hon. Thomas Riggs, Jr., former member of the Alaskan Engineering Commission, and now territorial governor of Alaska.

A final order of the Interstate Commerce Commission, establishing zones for standard time is expected to be issued shortly; it is understood that the final order represents little change from the form of tentative report issued several weeks ago, because no objection was made at the hearing before the commission on the tentative report.

One thousand dollars was the fine imposed on one of the 37 dining car employees recently arrested for fraud or embezzlement, on complaints made by the New York, New Haven & Hartford Railroad, and some of whom have been under trial at Boston. The largest fine was imposed on the man who had counterfeit meal checks printed. A number of waiters were fined \$300 each. Thirty-two other men are to be tried in December.

Intensive car loading on the Big Four (the Cleveland, Cincinnati, Chicago & St. Louis) in the month of July last effected a saving of 24 per cent in the number of cars used for l. c. l. freight. The amount of freight loaded, 105,419 tons, was about 16 per cent less than in the same month of last year, while the number of cars used, 11,093, was 36 per cent less than in 1917. The average loading per car this year was, 19,006 lb., as compared with 14,445 lb. in 1917.

The spontaneous "peace holidays" of November 7 and November 11, which were celebrated in Chicago as everywhere else, seem to have resulted in a serious accumulation of live stock at the Union Stock Yards; and the directors of the Central Western and the Northwestern regions found it necessary to put embargoes on the shipment of animals to Chicago for 48 hours, beginning at midnight November 12. Extensive arrangements had to be made to feed and water the stock which was stopped in transit.

Five hundred houses are needed at Cumberland, Md., to provide homes for 1,500 men who are expected to move to that city during the first three months of the next year to work in the new shops of the Baltimore & Ohio, now under construction; and the Chamber of Commerce of Cumberland is looking for capitalists to provide the needed money. The railroad company has put up to the Chamber of Commerce the question of providing for this increased population, and the real estate and banking interests of the city thus far have not been able to meet the situation. The bankers say that their resources have all been taken up by Liberty Bonds and other investments made necessary by the war.

"Track Inspection" of grain, with some innovations, is again being tried by the Illinois State Grain Inspection Department at Clyde (Chicago), on the Chicago, Burlington & Quincy, and if found successful will be put into effect on other roads. Moisture testing machines have been placed

in the switching yard, with a deputy inspector in charge, and the grain is being inspected, tested and split there so that samples can be delivered direct to the board of trade as soon as the cars arrive. It is believed that this method will result in a saving of one or two hours. In the event of a great rush of grain, moisture testing machines in the city offices of the grain inspection department will take care of the overflow.

Enormous Shipments to Gen. Pershing

A press despatch from Tours, France, says that the tonnage discharged at the nine American base ports in France in October by the service of supply with the American Expeditionary Forces increased nearly 20 per cent as compared with the previous month. The total was more than 919,000 tons, as compared with 767,000 in September. An average of 7,020 soldiers were landed daily in October. Our Yankees assembled and placed in service 150 French and Belgian locomotives, 2,546 freight cars, and 1,262 American locomotives. Nearly 13,000 American freight cars are now being operated by the Service of Supply. American engineers repaired in October over 300 French locomotives and 1,000 cars.

The Post Office and the Railways

Under Federal Control

Slason Thompson, of the Bureau of Railway News and Statistics, Chicago, calls the attention of Director General McAdoo to the fact that the announcement made recently by the Post Office Department concerning the great volume of mail carried during the summer months does not seem to correspond with the statement of railroad companies, receipts as published by the Interstate Commerce Commission. One mail superintendent reports an increase of about 40 per cent of mail handled during the past summer over 1917; and at the Pennsylvania Terminal, New York City, the weekly increases in parcel post packages have been 160 per cent, 274 per cent, 233 per cent and such like figures. Now, says Mr. Thompson, the income account for class 1 roads, for the months when these rate increases were recorded, show as follows:

EARNINGS FROM TRANSPORTATION OF MAIL

	1918	1917
February	\$8,949,646	\$10,634,687
May	4,562,564	4,994,881
August	4,474,822	4,830,148
Total, three months	\$17,987,032	\$20,459,716
Eight months' average to August 31	36,024,378	40,331,830

Railway Fire Protective Association

The annual meeting of the Railway Fire Protection Association, which was recently postponed on account of the influenza epidemic, will be held in Chicago on Tuesday, Wednesday and Thursday, December 3, 4 and 5.

Chicago Car Foremen's Association

At the annual meeting of the Car Foremen's Association of Chicago, held at the Morrison Hotel, Chicago, on November 11, the following officers were elected for the ensuing year: President, E. C. Chenoweth, mechanical engineer, Chicago, Rock Island & Pacific; first vice-president, M. F. Covert, Standard Car Construction Company; second vice-president, James Reed, assistant master car builder, New York Central; treasurer, F. C. Schultz, chief interchange inspector; secretary, Aaron Kline, 841 Lawlor avenue, Chicago.

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF SEPTEMBER, 1918.

Name of road.	Average mileage operated during period.	Operating revenues			Operating expenses			Net from railway operation.	Operating income (or loss).	Increase (or decrease) comp. with last year.
		Freight.	Passenger.	Total.	Way and structures.	Traffic.	General.			
Alabama Great Southern.....	312	\$613,900	\$291,519	\$905,419	\$68,234	\$8,418	\$15,150	\$700,182	\$21,229	\$55,032
Ann Arbor.....	293	322,942	64,337	387,279	49,183	1,542	8,610	377,133	13,100	—101,996
Arizona Eastern.....	377	326,911	50,583	377,494	67,223	1,515	13,582	286,118	17,875	44,949
Atchafalaya, Topeka & Santa Fe.....	8,646	10,896,783	3,215,713	15,554,288	1,864,562	110,940	216,705	13,489,767	600,297	—2,226,031
Atl. City.....	170	187,428	255,287	442,715	56,290	1,351	1,679	288,185	12,000	56,360
Atl. Coast Line.....	4,843	3,147,851	1,315,254	4,463,105	622,181	52,606	97,620	3,684,733	245,000	90,940
Atlanta & West Point.....	93	128,149	104,271	232,420	39,208	2,628	6,443	145,024	8,400	55,532
Atlanta, Birmingham & Atlantic.....	639	358,933	81,212	440,145	91,877	4,988	11,505	440,950	15,700	9,283
Baltimore & Annapolis.....	4,948	13,576,113	3,297,878	18,816,993	2,502,037	139,039	308,371	14,449,145	347,167	932,284
Baltimore & Ohio.....	91	.....	336	336	22,558	811	8,609	22,811	31,876	—106,343
Baltimore, Chesapeake & Atlantic.....	87	113,799	60,734	182,670	20,544	819	3,381	155,133	3,127	—4,019
Bangor & Aroostook.....	62	348,995	78,952	427,947	71,819	3,731	13,605	374,409	17,735	—36,141
Beaumont, Sour Lake & Western.....	118	84,295	21,706	106,001	21,566	205	2,994	83,740	1,600	21,708
Belt Ry. Co. of Chicago.....	31	.....	332,986	332,986	156,984	269	7,778	422,581	16,442	—106,038
Bessemer & Lake Erie.....	208	1,566,392	39,202	1,605,594	107,292	11,867	18,110	1,485,273	16,247	183,948
Bingham & Garfield.....	36	304,004	3,804	316,483	46,846	977	6,068	161,259	9,565	145,659
Birmingham Southern.....	27	77,722	2,040,983	2,118,705	4,587	1,101	3,413	40,557	5,728	45,131
Boston & Maine.....	2,305	4,406,271	1,555,550	5,961,821	778,331	30,801	144,063	5,082,199	174,094	1,899,256
Buffalo, Rochester & Pittsburgh.....	584	1,565,430	126,653	1,711,039	302,763	14,843	14,085	1,566,425	26,734	665,523
Buff. & Susq.....	271	181,001	6,138	196,337	41,006	1,702	8,197	196,431	4,100	—7,566
Canadian Pacific Lines in Maine.....	213	106,620	23,055	140,753	51,965	2,029	2,893	186,636	9,500	—35,383
Carolina, Clinchfield & Ohio.....	282	446,960	33,748	480,708	73,054	1,114	11,844	331,820	14,800	141,514
Central of Georgia.....	1,918	1,131,862	582,026	1,713,888	206,000	26,999	57,662	1,410,068	64,539	346,724
Central of New Jersey.....	684	3,170,316	743,528	3,913,844	392,811	26,302	66,779	2,958,803	166,974	1,086,992
Central New England.....	301	545,445	91,573	637,018	77,268	658	8,750	560,590	159,110	28,264
Central Vermont.....	411	384,858	94,544	479,402	68,925	6,424	13,767	468,342	16,560	44,666
Chesapeake & Western Carolina.....	342	197,173	74,541	271,714	33,054	3,863	11,844	235,816	9,000	6,696
Chesapeake & Ohio Lines.....	2,479	5,434,292	1,515,491	6,949,783	926,023	36,340	106,884	5,123,494	175,000	2,040,911
Chicago & Alton.....	1,050	1,779,743	569,113	2,348,856	399,996	19,462	42,048	2,342,899	58,195	31,352
Chicago & Eastern Illinois.....	1,131	2,179,313	428,908	2,608,221	320,169	25,475	49,028	2,168,945	79,592	594,461
Chicago & Erie.....	269	729,826	89,552	819,378	114,951	9,110	23,812	719,995	36,608	188,099
Chicago & North Western.....	8,090	9,483,159	2,815,696	12,298,855	1,794,916	68,031	236,315	10,455,443	420,000	2,468,654
Chicago, Burlington & Quincy.....	5,373	9,986,006	2,997,109	12,983,115	1,904,574	88,799	308,035	11,765,065	491,770	1,762,369
Chicago Great Western.....	1,496	1,265,461	464,959	1,730,420	308,971	24,009	39,449	1,528,564	54,975	296,840
Chicago, Indianapolis & Louisville.....	657	721,905	230,362	952,267	109,956	19,350	22,712	812,974	31,570	199,103
Chicago Junction.....	12	.....	2,563,990	2,563,990	63,594	27	8,190	352,741	1,468	—74,093
Chicago, Milwaukee & St. Paul.....	10,304	9,480,748	2,563,990	12,044,738	1,518,764	88,523	267,574	10,811,855	514,811	2,065,298
Chicago, Peoria & St. Louis.....	247	140,858	24,958	165,816	39,982	2,631	3,948	128,945	7,400	—101,381
Chicago, Rock Island & Gulf.....	474	276,320	98,507	374,827	56,703	5,120	11,981	317,266	13,155	108,163
Chicago, Rock Island & Pacific.....	7,735	6,211,279	2,798,250	9,009,529	1,424,885	76,826	175,375	7,561,379	366,021	1,830,740
Chicago, St. Paul, Minn. & Omaha.....	1,749	1,639,274	630,473	2,269,747	300,504	15,129	51,786	1,768,977	154,910	482,773
Chicago, Terre Haute & Southeastern.....	374	491,827	25,340	517,167	68,405	1,772	7,884	489,316	14,500	88,591
Cincinnati, Indianapolis & Western.....	351	331,178	50,670	381,848	44,172	5,009	11,949	365,817	13,590	88,815
Cincinnati, New Orleans & Texas Pacific.....	337	911,949	398,302	1,310,251	159,280	13,304	31,643	1,119,735	10,680	48,567
Cincinnati Northern.....	251	229,086	20,395	249,481	40,268	2,732	7,838	241,643	38,250	36,919
Cleveland, Cincinnati, Chic. & St. Louis.....	2,395	5,367,513	1,591,165	6,958,678	670,062	83,442	102,076	6,168,554	173,560	2,619,234
Coal & Coke.....	197	119,670	23,674	143,344	41,183	500	3,000	139,874	5,000	2,934
Colorado & Southern.....	1,100	878,383	213,698	1,092,081	146,140	6,428	36,291	911,527	47,000	285,276
Colorado & Wyoming.....	42	21,087	2,229	23,316	13,059	153	4,302	27,579	90,61	2,536
Cripple Creek & Colorado Springs.....	116	62,116	10,535	72,651	6,995	872	24,669	67,147	6,925	25,749
Cumberland Valley.....	163	525,842	342,257	868,099	54,625	4,276	11,880	818,184	7,231	301,440
Delaware & Hudson Co.—R. R. Dept.....	902	3,229,945	332,257	3,562,202	613,244	2,437	86,167	2,517,692	58,275	1,191,681
Delaware, Lackawanna & Western.....	935	4,501,871	1,370,828	5,872,699	516,720	36,734	101,272	5,255,658	234,661	524,246
Denver & Salt Lake.....	2,651	2,448,683	575,377	3,024,060	504,554	1,420	64,186	2,359,474	105,000	752,803
Denver & South Platte.....	235	175,993	36,756	212,749	33,760	933	4,438	209,770	9,000	—81,203
Detroit & Mackinac.....	381	89,391	18,601	107,992	22,760	3,557	7,045	120,107	8,607	—2,658
Detroit, St. Clair & Ironton.....	457	366,529	15,766	382,295	75,474	2,792	11,315	347,172	8,900	41,382
Detroit & Toledo Shore Line.....	80	172,863	.....	172,863	14,409	1,094	3,473	161,350	71,050	24,450
Duluth & Iron Range.....	284	1,209,908	17,603	1,227,511	98,613	526	11,356	1,128,872	73,050	293,094
Duluth, Missabe & Northern.....	410	3,259,744	38,714	3,298,458	153,182	2,399	41,653	3,145,266	171,763	2,376,124
Duluth, Winnipeg & Pacific.....	175	104,673	18,601	123,274	23,760	3,557	7,045	120,107	8,607	—2,658
East St. Louis Connecting Ry.....	3	967,435	263,323	1,230,758	100,161	272	2,713	1,088,824	2,000	—17,473
El Paso & Southwestern Co.....	1,027	1,734,582	263,323	1,997,905	180,895	8,186	19,079	1,797,020	110,985	563,062
Elgin, Joliet & Eastern.....	807	1,734,582	263,323	1,997,905	180,895	8,186	19,079	1,797,020	110,985	563,062
Erie.....	1,989	6,204,378	933,209	7,137,587	1,033,809	54,076	189,486	6,053,701	236,897	170,996
Florida East Coast.....	764	278,334	151,782	430,116	108,849	5,027	14,212	321,267	4,057	—144,989
Fonda, Johnstn & Gloverville R. Co.....	38	43,139	68,218	111,357	15,014	724	7,146	63,188	54,321	48,639
Fort Worth & Western R. Co.....	253	76,413	30,397	106,810	15,005	3,343	5,629	91,485	4,500	7,897
Fort Worth & Denver City.....	454	522,652	184,588	707,240	82,547	275,827	22,164	650,254	19,800	58,240
Fort Worth & Rio Grande.....	235	67,355	37,158	104,513	20,355	1,285	5,776	93,598	2,998	15,769

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF SEPTEMBER, 1918—CONTINUED

REVENUES AND EXPENSES OF RAILWAYS														
MONTH OF SEPTEMBER, 1918—CONTINUED														
Name of road.	Average mileage operated during period.	Operating revenues			Operating expenses			General.	Total.	Operating ratio.	Net from railway operation.	Railway tax accruals.	Operating income (or loss).	Increase (or decrease) comp. with last year.
		Freight.	Passenger.	Total (inc. misc.)	Maintenance of way and structures.	Equip-ment.	Traffic.								Trans-portion.
Galveston, Harrisburg & San Antonio..	1,382	\$1,484,132	\$466,464	\$2,058,877	\$2,507	\$947,791	\$16,574	\$629,709	\$54,301	\$1,615,967	\$406,910	\$51,111	\$355,678	—\$404,885
Galv. Wharf	13	451,958	279,857	775,185	826	1,409	231	22,976	494	52,021	20,858	11,800	9,058	—15,859
Georgia, Southern & Florida.....	328	193,614	92,176	315,991	54,115	170,248	5,214	230,400	15,332	495,693	279,492	5,950	273,523	112,408
Georgia, Southern & Florida.....	402	193,614	92,176	315,991	54,115	170,248	5,214	230,400	15,332	495,693	279,492	5,950	273,523	112,408
Grand Rapids & Indiana	569	438,487	222,945	719,230	86,110	324,006	9,735	300,140	21,491	745,939	103,71	745,939	—31,481	—89,891
Grand Trunk Western Lines.....	1,023	1,382,554	255,393	1,796,655	220,784	467,875	20,279	678,162	31,520	1,430,891	375,764	48,228	327,537	—202,826
Great Northern	8,257	8,715,709	1,564,385	10,279,707	1,662,936	1,972,971	47,141	3,757,184	151,667	7,687,115	3,280,592	496,178	2,783,790	157,338
Gulf, Mobile & Northern	402	168,628	44,069	212,697	47,588	50,989	4,583	81,388	8,317	193,481	70,088	20,026	52,337	—52,337
Gulf & Ship Island.....	402	148,052	58,722	206,774	52,517	37,153	2,743	77,400	8,337	178,369	11,044	37,430	37,430	—36,523
Gulf, Colorado & Santa Fe.....	1,937	1,355,571	448,614	1,804,185	262,849	485,783	14,036	623,507	45,848	1,424,409	513,721	69,646	45,901	—34,972
Hocking Valley	349	1,298,385	101,105	1,490,827	156,592	564,117	6,230	481,017	22,461	1,230,171	260,656	54,025	206,631	—135,399
Houston, East & West Texas.....	190	151,270	43,159	194,429	22,966	71,404	4,610	84,000	3,429	185,719	5,628	14,114	15,779	—40,483
Houston & Texas Central	887	591,483	284,297	875,780	24,515	514,311	8,300	768,289	17,812	768,289	84,009	32,200	112,966	—206,355
Illinois Central	4,782	8,024,188	2,026,613	10,050,801	1,364,403	2,558,241	65,826	3,661,459	234,449	7,933,277	2,869,224	518,686	2,350,345	572,735
Indiana Harbor Belt	116	.....	.....	.....	73,332	210,883	1,605	362,185	14,548	662,553	11,003	—126,087	—137,090	—247,543
International & Great Northern.....	1,159	887,837	335,364	1,223,201	208,034	408,908	12,556	491,406	35,836	1,156,720	198,016	30,000	167,986	—207,951
Kanawha & Michigan	176	475,936	125,697	601,633	69,457	286,023	3,309	139,123	13,177	561,089	68,624	17,843	50,781	—45,542
Kansas City, Mexico & Orient.....	272	150,689	15,757	166,446	61,147	178,782	8,995	61,212	6,248	149,261	25,059	18,809	18,809	17,639
Kansas City, Mexico & Orient of Texas.	465	14,498	115,348	129,846	26,252	66,253	1,021	58,581	5,681	131,788	136,79	—42,440	6,300	—48,752
Kansas City Southern	774	1,164,976	188,649	1,353,625	175,830	276,482	14,792	525,198	38,753	1,030,441	387,763	51,199	336,414	—40,177
Lake Erie & Western	900	732,776	59,532	792,308	133,692	247,312	12,441	375,917	20,668	788,562	43,578	42,457	1,112	—116,599
Lehigh & Hudson River.....	96	177,450	4,270	181,720	29,560	37,717	1,949	97,262	7,411	173,899	90,68	6,000	11,854	—36,378
Lehigh & New England	296	153,692	1,731	155,423	46,969	66,961	2,722	114,077	8,246	238,969	132,26	—38,289	8,590	—179,526
Lehigh Valley	1,439	5,273,168	631,544	5,904,712	1,226,068	2,393,882	39,364	2,502,975	8,117	5,101,464	1,306,406	161,471	1,144,734	246,556
Long Island	398	548,104	1,524,437	2,072,541	239,736	314,297	9,919	806,638	36,766	1,424,194	87,635	89,871	787,639	23,638
Los Angeles & Salt Lake	1,168	970,208	322,202	1,292,410	261,839	261,839	17,192	390,272	23,425	851,542	58,866	63,065	465,788	132,171
Louisiana & Arkansas	168	84,938	32,819	117,757	37,282	27,349	2,887	64,745	5,719	137,982	109,58	11,502	—22,463	—64,522
Low, Ky & Nav. Co.	356	193,543	63,127	256,670	49,137	72,872	3,746	136,808	7,919	270,538	100,62	—1,678	15,678	—89,568
Louisiana Western	207	268,799	107,915	376,714	24,561	47,462	3,799	97,082	9,998	294,970	73,33	107,306	12,476	—92,433
Louisville & Nashville	4,996	7,098,235	2,411,895	9,510,130	1,300,591	2,937,882	111,464	3,402,917	146,331	7,927,697	79,34	2,063,643	303,692	1,759,431
Louisville, Henderson & St. Louis.....	199	200,000	69,000	269,000	33,290	47,539	5,874	84,166	5,818	177,170	61,45	3,800	108,254	23,139
Maine Central	1,216	1,009,730	498,423	1,508,153	261,011	302,061	10,161	778,449	32,497	1,392,378	84,56	254,207	34,551	—48,202
Maryland, Delaware & Virginia Ry. Co.	82	72,167	57,824	130,000	7,831	31,024	644	70,526	2,146	112,170	1,892	19,070	19,070	1,952
Michigan Central	3,890,909	1,549,381	6,003,427	7,552,808	641,133	1,185,081	57,132	2,285,820	84,584	4,332,231	72,17	1,670,246	168,000	370,321
Midland Valley	1,861	251,869	337,291	589,160	56,098	56,098	808	111,107	10,359	234,955	91,570	7,101	84,442	—9,074
Minneapolis & St. Louis.....	1,646	997,957	198,314	1,196,271	190,930	314,002	11,787	463,629	26,367	1,006,822	249,037	52,780	196,197	—78,060
Minn., & International Ry. Co.....	195	38,868	19,863	58,731	62,604	19,861	336	84,091	41,022	2,101,946	94,88	3,130	24,257	—22,399
Mo., St. Paul & Sault Ste. Marie.....	4,243	3,121,694	593,674	3,715,368	518,885	1,262,414	31,328	1,430,317	73,787	3,494,444	84,18	628,973	193,339	435,634
Mo. & North Ark.	365	54,913	34,085	88,998	24,378	19,675	1,585	42,067	6,154	93,860	3,015	5,750	2,846	—33,704
Missouri, Oklahoma & Gulf.....	332	144,542	19,619	164,161	32,710	47,653	1,496	74,937	6,032	164,996	6,288	164,996	3,209	—19,977
Missouri, Oklahoma & Gulf of Texas.....	332	144,542	19,619	164,161	32,710	47,653	1,496	74,937	6,032	164,996	6,288	164,996	3,209	—19,977
Missouri Pacific	7,108	5,983,562	1,878,344	7,861,906	1,367,056	1,682,761	70,344	3,132,818	182,281	6,467,999	76,51	1,985,366	76,675	—19,977
Mobile & Ohio	991	1,078,486	209,715	1,288,201	163,691	750,707	24,920	539,547	34,328	1,513,505	109,38	—129,847	43,376	—108,164
Monongahela	108	258,446	23,637	282,083	63,805	33,507	600	85,145	7,535	190,592	65,94	98,405	94,654	21,541
Monongahela Connecting	5	.....	.....	.....	30,506	35,109	464	115,231	5,850	187,161	54,037	2,443	51,594	27,069
Morgan's Ln. & Texas R. & S. Co.	400	501,974	163,544	665,518	76,486	417,344	5,307	216,241	15,515	732,814	100,01	33,627	33,901	—182,949
Nashville, Chattanooga & St. Louis.....	1,236	1,409,769	686,701	2,096,470	274,886	909,402	336	840,901	41,022	2,101,946	113,287	33,334	79,854	—165,546
Nevada Northern	168	243,933	16,849	260,782	27,344	27,081	280	59,947	3,420	122,728	183,143	19,489	123,654	3,543
New England	701	.....	.....	.....	16,482	24,073	.....	61,610	3,485	105,651	67,32	51,283	43,211	40,333
Newburgh & South Shore R. R. Co.....	701	.....	.....	.....	16,482	24,073	.....	61,610	3,485	105,651	67,32	51,283	43,211	40,333
New Orleans & North Eastern	203	403,138	199,563	602,701	86,500	187,644	4,509	282,924	13,154	577,390	87,797	27,067	60,716	—75,678
New Orleans Great Northern	284	144,337	417,378	561,715	25,729	64,621	1,400	73,869	6,286	172,207	29,337	8,142	19,195	—45,008
New Orleans, Texas & Mexico.....	191	95,929	48,916	144,845	30,166	28,996	379	44,058	4,314	109,081	72,32	21,500	20,236	—19,292
New York Central	6,079	19,220,626	7,841,722	27,062,348	3,207,230	5,574,598	211,598	10,153,595	602,810	20,085,818	65,84	10,420,505	9,293,772	3,795,836
New York, Chicago & St. Louis.....	572	1,9,												

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF SEPTEMBER, 1918—CONTINUED

MONTH OF JANUARY														
Name of road.	Average mileage operated during period.	Operating revenues			Operating expenses			Operating ratio.	Net from railway operation.	Railway tax accruals.	Operating income (or loss).	Increase (or decrease) income with last year.		
		Freight.	Passenger.	Total (inc. misc.)	Maintenance of way and structures.	Equip-ment.	Trans-portion.						General.	Total.
Pittsburgh & Shawmut R. R. Co.	94	\$126,082	\$3,793	\$130,912	\$34,640	\$39,067	\$1,185	\$44,663	\$122,645	93.72	\$8,217	\$3,835	\$4,382	\$7,631
Pittsburgh & West Virginia.	63	146,277	10,075	156,352	54,845	58,787	1,175	67,473	120,009	118.12	30,386	15,236	15,150	102,132
Pittsburgh, Cincinnati, Chic. & St. Louis.	2,386	5,676,606	1,950,526	7,627,132	953,742	3,237,707	1,051,419	3,415,044	7,954,604	94.73	442,056	244,263	197,793	1,056,560
Port Reading.	27	198,846	257,996	456,842	13,379	18,948	1,116	79,040	111,833	43.34	140,163	10,000	130,163	88,038
Rich., Fred. & Pot.	87	334,547	434,008	830,613	36,895	74,037	2,787	196,801	324,485	39.06	506,485	13,211	493,274	352,682
Rutland.	415	254,665	137,033	485,796	80,620	94,918	10,893	184,966	382,099	78.65	103,686	18,382	85,304	60,571
St. Joseph & Grand Island.	258	173,884	32,644	223,212	46,042	41,624	2,246	120,312	223,421	99.64	791	8,607	7,820	122,122
St. Louis, Brownsville & Mexico.	548	319,987	124,776	485,480	58,514	71,528	993	105,469	247,017	50.88	238,463	9,944	228,519	91,376
St. Louis-Merchants Bridge Terminal.	9	.....	429	429	332,426	46,718	58,718	659	324,437	97.60	7,989	216,188	2,266,264	547,529
St. Louis-San Francisco.	4,761	4,743,625	2,004,820	7,211,930	867,066	1,287,392	45,782	2,359,439	4,708,472	64.92	2,543,457	18,188	2,525,269	11,593
St. Louis, San Francisco & Texas.	134	77,099	12,258	102,041	20,015	19,825	1,140	51,281	97,475	95.52	4,567	1,648	2,919	11,933
St. Louis, Southwestern of Texas.	814	290,302	183,646	515,514	126,496	213,888	6,666	240,938	609,546	118.24	94,032	19,531	113,640	253,044
St. Louis Southwestern.	968	813,286	203,086	1,061,289	153,388	218,202	14,910	298,074	712,805	67.16	348,484	47,248	301,236	106,043
St. Louis Southwestern.	732	293,499	143,472	487,533	73,711	132,908	4,684	172,123	400,591	82.16	86,941	15,000	71,941	71,362
St. Antonio & Aransas Pass.	3,563	1,989,413	1,583,443	3,971,222	530,586	845,447	68,662	1,368,175	2,923,330	73.61	1,047,691	118,210	928,682	366,270
Seaboard.	35	45,387	156,560	201,947	21,805	14,137	263	68,616	106,341	95.78	4,682	1,400	3,282	318
South Buffalo Ry. Co.	10,982	8,011,685	4,485,386	13,394,715	1,473,784	2,170,859	11,146	4,336,136	223,991	62.53	5,018,551	295,093	4,723,458	2,347,528
Southern in Mississippi.	278	85,345	48,453	133,798	31,699	34,770	1,988	65,695	136,974	94.02	8,705	9,000	47,936	19,480
Southern Pacific.	154	77,898	3,654,158	4,532,056	1,489,496	2,104,166	102,136	4,912,600	227,263	62.09	5,528,081	755,336	4,772,745	429,267
Spokane, Portland & Seattle.	554	567,650	156,560	724,210	123,928	149,113	4,531	238,155	335,203	69.53	234,482	77,000	157,479	83,349
Staten Isl. Rapid Transit.	23	101,023	80,851	181,874	22,115	22,058	967	92,330	136,974	77.12	46,251	14,000	32,250	5,314
Tennessee Central.	293	169,802	109,722	292,088	72,344	122,058	356	123,890	334,566	145.42	42,478	34,403	55,708	22,487
Terminal R. R. Ass'n of St. Louis.	36	.....	3,372	3,372	368,687	56,448	699	153,669	75,777	78.91	20,251	7,282	12,969	22,487
Texas & Pacific.	81	75,668	16,076	91,744	15,606	13,883	1,236	28,654	53,520	69.53	234,482	77,000	157,479	83,349
Texas & New Orleans.	469	418,933	170,668	634,497	44,049	701,460	4,688	201,015	971,925	153.18	337,428	19,416	357,030	138,991
Toledo & Ohio Central.	1,946	1,721,454	627,790	2,349,244	330,904	492,314	23,771	1,090,202	65,082	80.93	481,673	100,483	380,886	138,991
Toledo & Ohio Central.	435	737,770	69,245	807,015	164,787	356,046	6,031	426,823	17,025	111.63	101,389	30,359	131,748	388,832
Toledo, Peoria & Western.	247	115,356	52,065	167,421	28,195	71,100	2,418	79,316	6,402	105.38	9,601	8,500	18,101	24,626
Toledo, St. Louis & Western.	454	695,878	69,595	790,015	117,133	333,446	4,646	328,129	10,554	100.33	2,600	25,000	27,594	219,575
Trinity & Brazos Valley.	368	85,467	17,937	103,404	34,386	31,970	1,476	54,332	189,931	175.92	81,969	6,580	4,388,845	1,714,704
Union R. R. of Pennsylvania.	3,610	8,043,030	1,873,699	10,227,836	1,103,970	1,506,938	39,575	2,444,860	193,265	52.89	5,022,447	283,642	4,738,845	246,923
Union R. R. of Pennsylvania.	98	131,261	627	132,882	24,383	18,636	151	24,527	73,213	55.11	58,566	22,470	37,199	15,452
Utah Railway.	171	142,035	254,059	396,094	36,162	60,893	1,668	84,722	195,494	76.94	380,093	37,300	342,797	22,631
Vick., Shreveport & Pacific.	518	1,044,629	66,644	1,111,273	159,495	227,025	3,998	397,302	1,843,806	68.31	380,093	37,300	342,797	22,631
Virginian.	2,519	3,290,338	927,283	4,217,621	4,550,246	624,083	60,212	1,958,033	101,618	85.17	667,599	110,786	556,813	118,859
Wabash.	35	112,914	225,988	338,902	29,060	32,589	1,743	115,997	185,653	44.37	232,759	6,311	226,448	118,859
Wash. Southern.	359	320,900	809,998	1,130,898	1,195,871	206,812	237,096	1,058,860	1,015,007	84.87	180,863	44,068	136,795	45,624
West Jersey & Seashore.	707	1,283,015	106,256	1,455,299	317,920	579,557	16,497	646,692	30,543	110.14	147,648	43,200	190,848	54,619
Western Maryland.	1,011	891,736	105,044	1,036,991	185,496	125,588	12,715	321,163	18,870	55.22	360,619	40,115	320,469	11,244
Western Pacific.	133	146,406	303,932	450,338	29,312	41,767	2,484	75,873	158,157	52.04	145,776	7,000	138,776	95,974
Western Ry. of Alabama.	511	1,241,326	136,445	1,434,044	205,919	293,324	6,414	503,800	24,461	72.21	398,430	58,800	339,630	10,810
Wheeling & Lake Erie.	1,382	1,633,616	395,559	2,029,175	267,120	458,821	16,260	652,664	1,443,705	68.45	665,367	64,029	601,229	131,946
Yazoo & Mississippi Valley.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
NINE MONTHS OF CALENDAR YEAR 1918														
Alabama Great Southern.	312	\$4,507,137	\$1,804,153	\$6,720,938	\$548,962	\$1,569,922	\$116,308	\$2,505,256	\$128,621	72.90	\$1,821,111	\$189,489	\$1,631,622	\$150,481
Ann Arbor.	293	1,913,762	428,253	2,512,102	407,267	557,098	43,821	1,245,576	83,863	93.25	169,246	117,900	50,694	124,978
Arizona Eastern.	377	2,701,896	3,333,536	6,035,432	608,018	471,731	22,198	1,859,842	151,126	21.15	1,176,197	152,859	1,023,338	47,453
Atchison, Topeka & Santa Fe.	8,644	81,382,129	118,336,608	281,878,737	14,601,726	23,957,758	1,302,979	46,415,508	2,094,043	69.53	35,984,377	5,085,207	30,899,170	2,745,578
Atlanta & West Point.	93	849,677	752,260	1,601,937	184,904	294,513	33,726	601,688	58,602	66.95	591,625	75,500	516,067	229,812
Atlanta, Birmingham & Atlantic.	639	2,488,668	594,952	3,093,620	730,246	806,005	79,884	1,710,471	114,731	103.99	132,156	147,300	279,456	606,835
Baltimore & Ohio.	4,948	91,777,293	22,461,496	124,242,187	16,948,723	32,000,490	1,554,534	56,803,831	2,771,425	88.74	14,077,702	3,642,906	10,434,800	10,482,866
Baltimore & Ohio Chicago Terminal.	91	636,072	362,489	1,039,685	95,894	253,242	10,997	595,333	26,152	94.41	58,065	25,316	32,748	81,097
Baltimore, Chesapeake & Atlantic.	87	2,728,793	590,487	3,949,758	608,231	801,667	35,778	1,415,550	113,502	86.26	3,014,710	480,048	2,534,662	604,114
Bangor & Aroostook.	633	9,427,712	292,480	9,935,698	877,549	2,359,647	101,914	3,257,418	170,878	66.09	3,368,764	204,057	3,164,706	392,004
Bessemer & Lake Erie.	208	1,184,321	145,288	1,456,288	51,981,266	4,093,968	14,679	6,017,604	286,306	95.90	119,406	149,401	29,995	75,535
Belt Ry. Co. of Chicago.	31	753,543	283,433	1,036,976	2,937,748	301,049	1,676	1,828,189	67,475	66.65	358,769	18,800	339,916	124,263
Beumont, Sour Lake & Western.	118	2,4												

Railroad Men Handle 14-Inch

Guns on Railway Mountings

Lieutenant-Commander D. C. Buell, of the United States Navy, well known to railroad men as director of the Railway Educational Bureau, of Omaha, Neb., has just returned from an interesting expedition to France where he had charge of the erection and putting into service of a mobile battery of 14-inch naval guns on railway mounting. This battery has been in active operation on railway lines at the front and has wrought considerable destruction back of the German lines, as described in a statement, authorized by the Secretary of the Navy, published in the *Railway Age* of November 7. Lieutenant-Commander Buell has been connected with the Bureau of Ordnance of the Navy since last February. He was in Washington to offer his services in connection with the fuel conservation campaign when he happened to hear that a railroad man was needed to supervise the construction and later the erection of the mounting and equipment for the big guns. Within a few hours he had enrolled in the navy as a lieutenant and he was allowed four days in which to arrange his business affairs at Omaha before reporting at the Baldwin Locomotive Works at Philadelphia. He was later promoted to lieutenant commander, in recognition of his services in expediting the work; and he was sent to France, with 200 railroad men, whom he selected from among the enlisted men at the Great Lakes Naval Training Station, to mount the guns, make up the trains of cars which accompany them, and organize the forces. This work was done at the locomotive erection shop operated by the Nineteenth Engineers (Railway).

Marked Increase in Passenger Traffic in August

According to statistics for the month of August, 1918, compiled by the Operating Statistics Section of the United States Railroad Administration, the railroads under federal control showed an increase of 11.6 per cent in passenger miles over the same month in 1917. All of the regions showed increases except the Northwestern territory, which showed a decrease of 6.8 per cent. Data are missing for a number of Class I roads appended to the table. According to the statement, the Boston & Maine is the only one of these lines which lost in passenger business. The decrease which it showed would reduce the percentage of increase for the New England district.

PASSENGERS CARRIED ONE MILE ON FEDERAL-CONTROLLED LINES

Region	Miles operated	Passenger Miles (Thousands)		Increase	
		August, 1916	August, 1917	Amount	Per cent
Eastern—					
New England District.....	4,286	234,388	218,001	16,386	7.5
Central District	20,274	619,028	570,190	40,637	8.6
Ohio-Indiana District	15,866	293,682	282,176	11,856	4.1
Total, Eastern Region...	38,426	1,147,098	1,070,367	76,730	7.1
Allegheny Region	12,549	791,112	709,142	81,970	11.6
Pocahontas Region	4,290	89,875	70,385	19,470	27.7
Southern Region	37,002	598,427	447,121	151,306	33.8
Northwestern Region	46,632	450,519	483,628	d 33,109	d 6.8
Central Western	49,886	765,361	698,811	56,551	9.5
Southwestern Region	26,889	314,266	243,707	70,565	29.0
All Regions	215,674	4,156,659	3,723,156	433,503	11.6

REPORTS MISSING—CLASS I ROADS

Boston & Maine	Virginian
Grand Trunk in Maine	Charleston & W. Carolina
Maine Central	Georgia
Ann Arbor	Gulf, Mobile & Northern
Chicago, Detroit & C. G. T. J.	St. Louis-S. F. (Eastern lines)
Detroit & Mackinac	Duluth, S. S. & A.
Detroit & Toledo Shore Line	Mineral Range
Detroit, Grand Haven & Mil.	Denver & Salt Lake
Grand Rapids and Indiana	Western Pacific
Cincinnati-Northern	St. Louis-S. F. (of Kansas & Okla.)

Traffic News

Grain loading this year up to November 2 amounted to 547,597 cars, as compared with 412,540 in 1917, according to the weekly report of the Railroad Administration.

Joint passenger train service in Nevada over the Southern Pacific and Western Pacific railroads was begun on November 3. All trains of both roads now run east over the Western Pacific and west over the Southern Pacific between Winnemucca, Nev., and Wells, 182 miles.

The production of bituminous coal during the week of November 2, as in the preceding four weeks, continued on the downward grade, being estimated at 10,965,000 net tons, a decrease compared with the preceding week and the corresponding week of 1917. The total coal loading of all kinds by the railroads for the week was 228,879 cars, as compared with 233,971 in the corresponding week of 1917. With the figures for the week ending November 9 estimated, the railroads have loaded 723,074 cars more of coal this year than during the corresponding period of 1917. The percentage of full time output lost on account of car shortage during the week of October 26 is reported as 8.4.

Volume of Freight Passing Through Chicago

Statistics recently made public by R. H. Aishton, regional director of the Northwestern region, show the volume of freight traffic passing through the Chicago terminal district during the month of October, 1918. In that period 182,368 loaded cars and 69,370 empties, or a total of 251,738 cars, were brought into the terminal. This is a daily average of 8,120 cars, equal to 100 trains of 81 cars each. During the same month there were forwarded from the terminal district 225,414 loaded cars and 159,781 empties, or a total of 385,195 cars, or an average of 155 trains of 80 cars daily; grand total, incoming and outgoing, 636,933 cars.

National Industrial Traffic League

The annual meeting of the National Industrial Traffic League will be held at the Hotel Sinton, Cincinnati, Ohio, on November 21 and 22. Among the subjects which will be discussed in the reports of the various committees will be the return of the railroads to their owners after the war and a consideration of the relative merits of government and private ownership; the proposed mileage freight rates for southern and western territory; the withdrawal of exceptions to various classifications; the application of the average agreement to warehouses and public elevators; the recodification of demurrage rules; demurrage charges accruing on inbound loaded cars at grain elevators due to the inability to get cars for outbound grain; the joint uniform baggage tariff; the settlement of freight claims and standard forms for the presentation of freight claims; the long and short haul—Poindexter Bill S-313; and the proposed uniform freight classification.

RAILWAY EQUIPMENT EXPORTED from the port of New York during the month of September, 1918, included steam locomotives valued at \$1,261,055, and steel rails at \$892,944.—*Bulletin of the National City Bank of N. Y.*

LATIN-AMERICAN TRADE.—Trade of the United States with Latin America has increased 136 per cent since the year ending June 30, 1914, immediately preceding the outbreak of the European war. Exports and imports in the fiscal year ended June 30, 1918, exceeded by far those of any earlier year. According to figures made public by the National City Bank of New York, 1918 trade aggregated \$1,770,000,000, against \$750,000,000 in the fiscal year just before the war.

Commission and Court News

Interstate Commerce Commission

The commission has approved a note to the regulations for the transportation of dangerous articles providing that during the war or until further order of the commission, fiber cartons may be substituted for interior metal cans. These fiber cartons must be of not less than 0.05 in. material and must be securely closed.

Court News

Refrigeration of Cars

In an action by a shipper against a carrier for damage caused by insufficient refrigeration the South Carolina Supreme Court holds that the rule of the Interstate Commerce Commission that carriers shall be relieved for failure to keep cars under refrigeration before the first re-icing station is reached, if the shippers delay the cars at loading stations more than 24 hours, casts the burden on the shipper in such case to prove that damage from insufficient refrigeration was caused by negligence of the carrier after reaching the re-icing station. Judgment for the plaintiff was reversed, the evidence not being sufficient to

Equipment and Supplies

Standard Locomotives Ordered

The distribution of the order for 600 locomotives for 1919 delivery, published in the October 25 issue of the *Railway Age* on page 757, has been changed as follows: American Locomotive Company, 50 six-wheel switchers, 150 eight-wheel switchers, 150 light Mikados, 50 heavy Mikados, 20 light Santa Fe, five heavy Santa Fe and 75 2-8-2 Mallets, and the Lima Locomotive Corporation, 100 light Mikados.

Locomotive and Car Deliveries

A total of 50 locomotives were shipped to the railroads under federal control during the week ended November 2, of which 40 were shipped by the American Locomotive Company; six by the Lima Locomotive Works, and four by the Baldwin Locomotive Works. These locomotives included 35 of the U. S. R. A. standard types.

The three principal locomotive builders during the month of October, shipped 265 locomotives to railroads under federal control, in addition to 343 locomotives completed or shipped for miscellaneous domestic service or for use abroad, a total of 608. The 269 locomotives included 158 of the U. S. R. A. standard types. The detailed statement issued by the Railroad Administration follows:

Works	For period October 1 to 5			For week October 6 to 12			For week October 13 to 19			For Week October 20 to 26			For period October 27 to 31			
	Road	No.	Type	Road	No.	Type	Road	No.	Type	Road	No.	Type	Road	No.	Type	
American	T.O.C.	15	USRA Mik.	G.T.-N.E.	10	USRA Mik.	N.Y.C.&S.E.	10	USRA Mik.	C.&A.	3	USRA Mik.	Rutland	2	USRA Mik.	
	P.M.&Y.	10	USRA Mik.	L.&N.	13	USRA Mik.	L.&N.	6	USRA Mik.	Erie	7	USRA Sw'h	H.V.	1	Mallet	
	T.O.C.	1	USRA Sw'h	Chi.Jt.	5	USRA Sw'h	C.&O.	5	Mallet	T.&P.	11	USRA Mik.	Erie	1	Mallet	
	P.Term.	2	Switcher	C.&O.	4	Mallet	Erie	5	USRA Sw'h	W.&L.E.	6	USRA Mik.	Sou.	11	Mallet Mik.	
	W.ofA.	1	USRA Sw'h	Erie	2	USRA Sw'h	W.Pac.	5	Mikado	H.V.	3	Mallet	Erie	5	Mallet Mik.	
	Pa.L.W.	1	Santa Fe	L.V.	5	USRA Mik.	Chi.Jt.	5	USRA Sw'h	Erie	4	USRA Mik.	N.Y.C.	2	Mallet Sw'h	
	Virgn.	1	Mallet				C.&A.	7	USRA Mik.	Chi.Jt.	4	USRA Sw'h	P.L.W.	1	Santa Fe	
	L.&N.	1	USRA Mik.				W.&L.E.	4	USRA Mik.	Rutland	4	USRA Mik.	C.&N.W.	1	Mikado	
	A.&W.P.	1	USRA Sw'h							P.L.W.	1	Santa Fe	W.&L.E.	2	USRA Sw'h	
	Erie	1	USRA Sw'h										A.C.L.	2	USRA Sw'h	
	C.&O.	1	Mallet													
	35			39			47			43			28			
Baldwin	Sou.	1	Mallet	P.&R.	1	Consolid.	P.&R.	2	Consolid.	Penna.	1	Mikado	P.&R.	1	Mallet	
	Ill.Cent.	1	Mikado	St.L.-S.F.	1	Santa Fe	P.R.R.	1	Mikado	C.C.C.&St.L.	3	USRA Mik.	C.C.C.&St.L.	2	USRA Mik.	
	L.E.&W.	2	USRA Mik.	A.T.&S.F.	1	Mikado	C.C.C.&S.L.	2	USRA Mik.	U.Pac.	1	Mikado				
	A.T.&S.F.	1	Mikado	Gt.N.	1	Switcher	A.T.&S.F.	1	Mikado	St.L.-S.F.	1	Santa Fe				
	U.P.	1	Mikado	C.B.&Q.	1	Mikado										
	Gt.N.	1	Mikado	C.C.C.&St.L.	1	USRA Mik.										
	P.R.R.	1	Mikado													
	C.C.C.&St.L.	3	USRA Mik.													
	A.C.L.	1	Mikado													
	12			6			6			6			3			
Lima	Ill.Cent.	8	Mikado	Ill.Cent.	9	Mikado	Ill.Cent.	9	Mikado	Ill.Cent.	9	Mikado	Ill.Cent.	5	Mikado	
	55			54			62			58			36			
Grand total																265

In addition to the above the American Locomotive Company shipped 29 miscellaneous domestic locomotives and completed 14 foreign locomotives, and the Baldwin Locomotive Works shipped 1 miscellaneous domestic and completed 299 foreign locomotives.

support the jury's finding that the carrier was negligent.—Brown v. Southern (S. Car.), 96 S. E., 298. Decided July 6, 1918.

Court Sustains General Order 18

Judge Trieber, in the United States District Court for the Eastern District of Missouri, has recently handed down a decision involving General Orders 18 and 18-A, issued by Director General McAdoo, which require that all suits against carriers while under federal control must be brought in the county or district where the plaintiff resided at the time of the accrual of the cause of action or in the county or district where the cause of action arose. Suit was brought in St. Louis by a woman whose husband resided in Pittsburgh and was employed by the Pennsylvania Railroad. Defendant pleaded General Order 18 and 18-A; and the plaintiff demurred to the plea. The court held that the federal control act authorized the President and the director general, acting for him to issue the orders; that the act is constitutional; that the general orders in question were promulgated because of public necessity in time of war; and are sustained.

A total of 785 freight cars and six passenger cars were constructed in the railroad shops during the month of September.

Locomotives

THE PENNSYLVANIA EQUIPMENT COMPANY, 1420 Chestnut street, Philadelphia, Pa., is in the market for a second-hand, 60- to 80-ton, 6-wheel switching engine, with a wheelbase not over 11 ft. 6 in.

Signaling

PERE MARQUETTE.—An order has been given to the Union Switch & Signal Company for automatic block signals for 67 miles of road between Fowlerville, Mich., and Elmdale, and for 23 miles between Grand Rapids, Mich., and Waverly. This work will require 150 high and 5 dwarf signals and 115 switch indicators. Keystone insulation will be used at rail joints and ends of sections.

Supply Trade News

Leonard C. McChesney, advertising manager for the Thomas A. Edison industries for 16 years, died of heart disease November 10, at his home in Orange, N. J.

The Washington (D. C.) offices of the Austin Company have been moved to 1406 G street, North West. **C. F. Chard**, formerly of the Philadelphia office of this company, will be in charge of this office.

Major E. Tyden, vice-president of the International Seal & Lock Company, has been promoted to lieutenant-colonel in the Division of Ordnance. Colonel Tyden is located at Rock Island, Ill., as production manager of the Rock Island arsenal.

The **Hall-Scott Motor Company** will build an addition to its machine shop at Berkeley, Cal., which will be of concrete construction and will cost about \$40,000. Upon the completion of this building the company will have a total area of 31,250 sq. ft. for shop use.

In order to have a name more descriptive of the products it manufactures, the **Cleveland Galvanizing Works Company**, the general offices and plant of which are at Cleveland, Ohio, will be known in the future as the **Chain Products Company**. The company, under its old name, has been in business since 1886.

Marshall E. Keig, secretary and treasurer of Harry Vissering & Co., Chicago, who was given leave of absence in August to enter the Signal Corps of the Army as a private, has been commissioned a second lieutenant in charge of purchases in the west for the Signal Corps, with headquarters at Chicago.

The **Walter A. Zelnicker Supply Company** announces the appointment of R. H. Wilson as assistant to the president, with office at St. Louis. Mr. Wilson has been with the company for years, latterly as Houston representative. He is succeeded there by E. O. Griffin, formerly storekeeper and assistant general manager of the International & Great Northern; and more recently, assistant to the president of the St. Louis Southwestern in charge of purchases.

In Charge of Foreign Trade Service

Allen Walker, New York manager for the United States Chamber of Commerce since the organization of that body in 1913, has joined the Guaranty Trust Company of New York, and will have charge of its foreign trade service.

Prior to joining the United States Chamber of Commerce, Mr. Walker studied commercial organization in Europe, and extensive travels and studies have familiarized him with market conditions in other parts of the world. Since the United States entered the war, he has been responsible for the organization of many commercial and industrial groups which have been brought into contact with various Governmental departments through war service committees. He has had charge of the administration of the agreement between the United States and Argentina which the International High Commission established for the settlement of commercial disputes by arbitration and has acted as arbiter in many cases of disagreement, due to transportation and embargo difficulties arising out of the war, between domestic and foreign business houses.

The foreign trade service of the Guaranty Trust Company of New York is the agency through which a variety of services are performed for the American exporter and importer. It supplies information regarding business opportunities in foreign countries and the commercial conditions peculiar to each. Classified indexes of foreign and domestic manufacturers and dealers are maintained for the purpose of bringing buyers and sellers together. By reason of his wide experience and his knowledge of what American industries want

in the way of foreign service, Mr. Walker is regarded as especially fitted to assist our manufacturers and exporters in that development of international trade which is now recognized as one of the most important features of our reconstruction program.

L. J. Kennedy, who for many years has been associated with the Consolidated Railway Electric Lighting & Equipment Company, died in Chicago on October 30. Mr. Kennedy was born in Watertown, N. Y., in 1880, but at an early age moved to Chicago and received his education in the public schools of that city. In 1900, he returned to the east and entered the employ of the Consolidated Railway Electric Lighting & Equipment Company as a machinist in the factory at Shelton, Conn. He was later employed as an inspector, taking care of car lighting equipment on various roads running into Chicago. Mr. Kennedy applied the first electric lighting equipment to the Golden State Limited and also to the Twentieth Century Limited. Later he had charge of the maintenance and operation of the lighting on those trains. After holding this position for some time, he was placed in charge of the manufacture and sales of the Consolidated company at Chicago, and later, when the Consolidated company discontinued its manufacturing in Chicago, Mr. Kennedy remained in charge of the sales only. In 1913, he left the employ of the Consolidated company to engage in boat building on the North Side of Chicago. Later he went to New Mexico on account of the health of his family and accompanied Pershing's Expedition into Mexico. In 1916, he returned to the employ of the Consolidated as sales engineer, but left the company again in 1917 to once more engage in the boat building business in which he was very successful in completing some large contracts for pontoons for the army.

Trade Publications

LOCOMOTIVE LUBRICATORS.—The Detroit Lubricator Company, Detroit, Mich., has published a 62-page catalogue covering the Detroit Bullseye locomotive lubricators and other locomotive specialties manufactured by this company.

COAL GATES.—Catalogue No. 37 of the Beaumont Manufacturing Company, Philadelphia, Pa., illustrates and describes the Beaumont standard types of gates for controlling the flow of coal, ashes, coke, etc., from bins and pockets. The purpose of the catalogue is to present the results of the company's experience in designing and installing gates for varied purposes, and the types illustrated in the catalogue have been adopted as standard.

CAR HEATING.—A 12-page folder, entitled Vapor System with No. 1112 Vapor Valve, published by the Gold Car Heating & Lighting Company, New York, presents the advantages of a new vapor valve, No. 1112, for use with Gold's vapor system, which is designed for application on the inside of the car. The construction and operation of the valve are fully described, as well as the method of applying it, which is made clear with a number of sketches.

RAILROAD MACHINERY CATALOGUES WANTED.—A representative of the Federated Swiss Railroads recently called at the Zurich consulate general and asked that catalogues be obtained for him from American manufacturers of mechanical iron rail saws, boring machines for iron railroad rails and wooden railroad ties, mechanical spike pullers, apparatus for carrying and laying iron rails, machines for drawing together rails at joints in tracks, railroad gang cars, propelled by hand and with motor attachment. He informed this office that heretofore all machinery and tools for the Swiss railroads have been obtained from America through agents in Germany who can no longer supply these needs. For this reason he wishes to place his orders in America or with agents that American manufacturers might appoint in Switzerland. The representative of the Swiss railroads surmises that new improvements have been made in the past few years by American manufacturers of this class of machinery, and he is particularly interested in hearing about these.

Railway Financial News

BOSTON & MAINE.—The reorganization plan provides that the company takes over through consolidation its seven principal leased lines. The stockholders of the leased lines will get share for share one share of the preferred stock of the reorganized Boston & Maine. This stock will pay the same dividend as that guaranteed by the existing leases except that the dividends will be reduced by 20 per cent for five years in order to provide a fund for improvements and paying debts. Dividends on the new preferred take precedence over the existing preferred stock.

The federal government, it was also announced, will loan to the reorganized company \$19,879,060 to pay the overdue indebtedness of the parent road and its subsidiaries. In exchange for this sum the Boston & Maine will issue \$17,606,060 5 per cent bonds and \$2,273,000 6 per cent bonds, all of which will be secured by a mortgage to cover the existing bonds and notes of the Boston & Maine and its leased lines. At the conclusion of the reorganization the Boston & Maine will have \$38,817,300 first preferred, \$3,149,800 ordinary preferred and \$39,505,100 common, a total for the stock of \$81,472,800. The funded debt will total \$103,167,890.

Earnings for five years over and above the amount necessary to pay dividends on the first preferred and 4 per cent on the present preferred will be paid into a sinking or trust fund to secure repayment of the government advances. In the meantime the Boston & Maine has an option to sell at not less than par \$12,000,000 6 per cent first preferred, the proceeds to be used to pay off \$12,000,000 bonds. If this is done no further payments will be made into the trust fund and earnings thereafter may be paid out in dividends. The earnings released by the temporary reduction in dividends on the preferred stock are to be invested in permanent improvements or applied to the reduction of debt.

There is no provision in the reorganization plan for taking over the Hampden Railroad. If judgment is recovered against the Boston & Maine the necessary sum will be loaned by the federal government.

See editorial on Boston & Maine reorganization plan in *Railway Age*, September 20, 1918, page 537.

CHICAGO & EASTERN ILLINOIS.—The annual meeting of the stockholders has been postponed until December 10.

INTERBOROUGH RAPID TRANSIT.—All of the \$33,400,000 3-year 7 per cent convertible notes of this company, which were offered for subscription at 98½ a few weeks ago, have been sold.

NORFOLK & WESTERN.—President L. E. Johnson in a letter sent to stockholders states that the company's compensation for the federal use of its property, while not yet finally determined, will approximate \$20,700,000. President Johnson says that this will provide for interest charges and other requirements, and the usual dividends, with a surplus which may be used for additions and betterments. President Johnson adds that the standard clauses of the company's contract with the government, as approved by Director General McAdoo, have also been approved by the directors of the company. His letter continues: "In addition to the standard clauses, the contract when executed will also embody special terms applicable to your company. Consideration of these may necessitate further adjournment of the meeting of stockholders. In its final form, the contract will come before the adjourned meeting for ratification."

The approximate amount of the federal compensation mentioned by President Johnson, after allowing for non-operating income and fixed charges similar to those of 1917 and deducting \$2,000,000 for estimated war taxes, would cover the preferred dividends and leave a balance equal to about 12 per cent upon the \$120,445,400 common stock outstanding. This calculation is not contained in President Johnson's letter and is entirely unofficial.

Railway Officers

Railroad Administration

Federal and General Managers

J. P. Beckwith, general manager of the Florida East Coast, with office at St. Augustine, Fla., has been appointed federal manager.

W. D. Duke, general manager of the Richmond, Fredericksburg & Potomac, with office at Richmond, Va., has been appointed federal manager.

The Coal Belt Electric railroad has been placed under federal control and assigned to the jurisdiction of **A. Robertson**, federal manager, St. Louis, Mo.

W. P. Kenney, federal manager of the Great Northern, with headquarters at St. Paul, Minn., has had his authority extended over the Minneapolis Western.

C. M. Kittle, federal manager of the Illinois Central, with headquarters at Chicago, has been appointed federal manager also of the Central Elevator & Warehouse Company, New Orleans.

Operating

C. W. Blount has been appointed trainmaster, and **F. H. Herron**, assistant trainmaster of the Ohio River & Western, both with headquarters at Zanesville, Ohio.

E. F. Rummell has been appointed trainmaster on the River division of the Chicago, Milwaukee & St. Paul, at Minneapolis, Minn., succeeding **O. N. Harstad**, promoted.

M. J. Ruland has been appointed trainmaster on the Salt Lake division of the Denver & Rio Grande, at Thistle, Utah, succeeding **J. R. Loftis**, promoted; effective November 4.

F. C. Dow, acting superintendent of the Coast Division, the Tacoma Eastern Railroad, and the Milwaukee Terminal Railroad, has been appointed superintendent, with office at Tacoma, Wash.

A. T. Mercier, assistant superintendent of the Shasta division of the Southern Pacific, has been appointed superintendent of the lines north of Ashland, Ore., with headquarters at Portland, Ore., succeeding **F. L. Burckhalter**, assigned to other duties on the Pacific system lines.

S. M. Estabrook has been appointed manager of dining cars, hotels and restaurants of the Southern Pacific (lines south of Ashland, Ore.), the Western Pacific, the Tidewater Southern and the Deep Creek railroad, with headquarters at San Francisco, Cal., succeeding **A. Pollok**, resigned.

G. H. Dougherty has been appointed general fire prevention inspector of the Kansas City Southern, the Texarkana & Ft. Smith, the Midland Valley, the Houston, East & West Texas, the Vicksburg, Shreveport & Pacific, the Kansas City, Mexico & Orient and the Joplin Union depot, with headquarters at Kansas City, Mo.

Arthur Williamson, road foreman of engines on the Western Maryland, with office at Hagerstown, Md., has been appointed superintendent of the Elkins division on the Western Maryland; the Cumberland Valley, and the Cumberland & Pennsylvania Railroad, with headquarters at Cumberland, Md., vice **J. F. Chisholm**, deceased.

The Memphis, Dallas & Gulf has been included in the jurisdiction of **J. W. Dean**, general superintendent of the Missouri Pacific, with headquarters at Little Rock, Ark., and of **T. M. Wallis**, assistant general superintendent at Nashville, Ark. **C. C. Henderson**, vice-president and general manager of the Memphis, Dallas & Gulf, has been appointed assistant general manager, with headquarters at Nashville.

M. McKernan, superintendent of safety of the Missouri Pacific, with headquarters at St. Louis, Mo., has had his

jurisdiction extended over the St. Louis Southwestern, the Louisiana & Arkansas, the Memphis, Dallas & Gulf, the Arkansas Central, the Natchez & Southern, the Natchez & Louisiana Railroad Transfer and the Southern Illinois & Missouri Bridge. **E. Richards** has been appointed assistant superintendent of safety of the same lines, with office at St. Louis.

A. O. Veitch, assistant superintendent of the Chicago, Milwaukee & St. Paul, with office at Avery, Ohio, has been appointed assistant superintendent of the Rocky Mountain division, with office at Three Forks, Mont., vice **J. W. Ross**, deceased. **D. J. Hagerty** has been appointed assistant superintendent of the Missoula division, with office at Avery, vice Mr. Veitch, and **E. L. Cleveland**, traveling engineer, has been appointed trainmaster of the Trans-Missouri division, vice **J. P. Phelan**, promoted.

Financial, Legal and Accounting

D. C. Follas has been appointed federal auditor of the Toledo Terminal Railroad, with headquarters at Toledo, Ohio, succeeding **Bryan Thomas**, resigned.

F. B. McIlvaine has been appointed auditor of freight overcharge claims of the Michigan Central and the Chicago, Kalamazoo & Saginaw, with office at Detroit, Mich.

H. F. Green, real estate and tax commissioner of the Chicago & Alton, has been appointed real estate and tax agent of that road, the Chicago, Peoria & St. Louis, the Peoria & Pekin Union and the Peoria Railway Terminal, with headquarters at Chicago.

J. M. Coddington, formerly special accountant on the staff of **G. E. Hustis**, federal auditor of the Delaware, Lackawanna & Western, has been appointed assistant auditor of freight and ticket accounts, of the Lackawanna, with offices at Scranton, Pa., succeeding **A. W. Lishawa**, who resigned to become treasurer of the Wright-Martin Aircraft Corporation and Simplex Motor Company, New Brunswick, N. J.

Oscar Homer Bower, whose appointment as federal auditor of the Pyeatt group of lines, with headquarters at Dallas, Tex., was announced in these columns on October 25, was born at Carrollton, Ark., on December 12, 1882. He began railway work on August 3, 1898, with the Ft. Worth & Rio Grande as messenger at Comanche, Tex., and from November, 1899, to June, 1901, was freight and ticket agent successively at Proctor, Tex., and Blanket. He then filled various clerical positions, including that of chief clerk at Ft. Worth, Tex., until March, 1909, when he was made special accountant of the Ft. Worth & Denver at Ft. Worth. From April 1, 1910, to August, 1912, he was secretary and auditor of the Wichita Valley at Wichita Falls, Tex., and from the latter date to August 31, 1913, was chief clerk to the general manager of the Missouri, Kansas & Texas of Texas at Dallas. He then became chief clerk to the auditor of that road at St. Louis, Mo., and was promoted to auditor of receipts, with headquarters at Dallas, Tex., on January 1, 1914, remaining in that position for nine months, when he became auditor. On October 1, last, he was appointed federal auditor of the roads under the jurisdiction of **J. S. Pyeatt**, federal manager, including the Ft. Worth & Denver City, the Ft. Worth & Rio Grande, the Ft. Worth Belt, the Gulf, Colorado & Santa Fe, the Houston & Texas Central, the International & Great Northern (from Spring to Ft. Worth and the Madisonville branch), the Missouri, Kansas & Texas of



O. H. Bower

Texas, the St. Louis, San Francisco & Texas, the Texas Midland, the Union Terminal of Dallas, the Wichita Valley & Northwestern and the Wichita Valley.

Engineering and Rolling Stock

Charles Emerson has been appointed master mechanic of the Fargo division of the Northern Pacific, with office at Dilworth, Minn., in place of **R. P. Blake**, transferred.

J. E. O'Brien, mechanical superintendent of the Missouri Pacific, with headquarters at St. Louis, Mo., has had his jurisdiction extended over the Memphis, Dallas & Gulf.

J. F. Kimbell, division foreman of the El Paso & Southwestern, at Carrizozo, N. M., has been appointed master mechanic of the Western division, with headquarters at Douglas, Ariz., in place of **F. P. Roesch**, resigned.

Charles P. Richardson, assistant engineer of track elevation of the Chicago, Rock Island & Pacific, has been appointed engineer of water service of the Rock Island lines, with headquarters at Chicago, succeeding **J. M. Brown**, who resigns to enter the service of the Rock Island corporation.

A. J. Wharf, chief engineer of the Peoria & Pekin Union, has been appointed assistant chief engineer of that road, the Chicago & Alton, the Chicago, Peoria & St. Louis and the Peoria Railway Terminal, with headquarters at Peoria, Ill. **W. F. Rech** has been appointed bridge engineer of those roads, with office at Chicago.

W. H. Brown, division engineer of the Pennsylvania Railroad, Western Lines, with headquarters at Zanesville, Ohio, has had his authority extended over the Ohio River & Western. **F. A. Collar** has been appointed assistant division engineer of the latter road; **A. R. Dean**, supervisor, and **R. J. Sponseller**, road foreman of engines, all with headquarters at Zanesville.

B. J. Farr, whose appointment as superintendent of the motive power and car department of the Grand Trunk Western Lines, with headquarters at Detroit, Mich., was announced in the *Railway Age* of November 1, was born at Ellenburg, N. Y., on September 8, 1876. He began railway work in 1893 as a machinist apprentice for the Central Vermont at St. Albans, Vt., and after completing an apprenticeship of five years he was made erecting shop foreman, being advanced to general foreman in 1900. In 1905, he went to the Delaware & Hudson as general foreman of the motive power and car department at Schenectady, N. Y., and the following year he became master mechanic for the United Fruit Company's lines at Port Limon, Costa Rica. From 1908 to 1914, he was employed in the engineering department of the Isthmian Canal Commission at Gatun and Cristobal. He then became connected with the Grand Trunk, as general foreman on the western lines, at Battle Creek, Mich., and in 1916 was promoted to master mechanic at that point, which position he held until his recent appointment as superintendent of the motive power and car department. He will also have jurisdiction over the Detroit & Toledo Shore Line.

Corporate

Executive, Financial, Legal and Accounting

W. F. Brunner, assistant to general manager of the Pittsburgh & Lake Erie, has been appointed assistant to president, with headquarters in Pittsburgh, Pa.

J. C. Nelms, Jr., general auditor of the Norfolk Southern, with office at Norfolk, Va., has been appointed secretary and auditor for the corporation, and **G. E. Christie** has been appointed assistant secretary and assistant treasurer.

George D. Dixon, vice-president of the Pennsylvania Railroad, with headquarters at Philadelphia, Pa., has been elected also vice-president of the Lehigh & Hudson River, succeeding **J. J. Beattie**, who has resigned as vice-president and director to resume his place as general solicitor of the road under the Railroad Administration. **John W. Sanford** has been appointed secretary and treasurer of the L. & H. R., with headquarters at Warwick, N. Y.

George H. Crosby, vice-president, secretary and treasurer of the Chicago, Rock Island & Pacific, has asked to be relieved of active duty after 47 years' service with that company and the board of directors has granted his request, effective November 1. **Carl Nyquist** has been elected secretary and treasurer, with headquarters at Chicago.

Robert Phipps Ormsby, who has been appointed secretary of the Canadian Northern Railway Company, with headquarters at Toronto, Ont., as has already been announced in these columns, was born on June 26, 1869, at Arklow, Ireland. He was educated in the grammar schools and at Cambridge University, England. He was in the service of the Canadian Pacific for a short time at Vancouver, B. C., and then went to the Great Northern, at St. Paul, Minn. In 1902 he entered the service of the Canadian Northern, as secretary to the chief solicitor, and since 1910 served as assistant secretary until his recent appointment as secretary of the same road, as above noted.

Will H. Lyford, vice-president and general counsel of the Chicago & Eastern Illinois, with headquarters at Chicago, whose election to the former office was announced in the *Railway Age* of October 25, was born at Waterville, Me., on September 15, 1858. He was admitted to the bar in October, 1884, but entered railway service in 1879 with the Chicago & Eastern Illinois, with which company he has remained ever since. From July, 1879, to February, 1880, he was assistant engineer, and from the latter date to January, 1882, was employed as stenographer for the general superintendent. He then became chief clerk to the general manager, and in April, 1883, was advanced to the position of claim agent. On October 10, 1884, he was appointed assistant general solicitor, and three years later was promoted to attorney in charge of the law department. Mr. Lyford became general solicitor on February 1, 1889, and on March 15, 1892, was appointed general counsel.



W. H. Lyford

Traffic

S. C. Griffin has been appointed traffic manager and freight claim agent of the Sugar Land Railway, with office at Sugar Land, Texas.

E. F. Flinn has been appointed general western freight agent of the Grand Trunk Railway System (lines in Canada), with office at Chicago, and **Hugh H. Hamill** has been appointed general agent (freight department), with office at Detroit, Mich.

W. B. Hinchman, assistant to the traffic manager of the Tonopah & Tidewater, the Death Valley and the Bullfrog Goldfield, with headquarters at Los Angeles, Cal., has been appointed assistant traffic manager of those roads, with office at Goldfield, Nev.

Engineering and Rolling Stock

W. E. Nicholson, assistant to chief engineer of the Norfolk Southern, at Norfolk, Va., has been appointed chief engineer for the corporation.

G. J. Wentz has been appointed master mechanic of the Montana, Wyoming & Southern, with office at Belfry, Mont., vice **H. R. French**, resigned.

J. M. Brown, engineer of water service of the Rock Island lines, has been appointed corporate engineer of maintenance and construction, with headquarters at Chicago.

Railway Officers in Military Service

C. D. Young, superintendent of motive power of the Pennsylvania Railroad, with office at Wilmington, Del., has been commissioned a lieutenant-colonel in the Transportation Corps, Engineers.

Captain W. M. Vandersluis, formerly signal engineer of the Illinois Central, at Chicago, now in the Motor Transport Service of the American Expeditionary Forces in France, was promoted to major early in October and has since been transferred to the transportation service in the capacity of signal engineer, reporting to the general manager of that service.

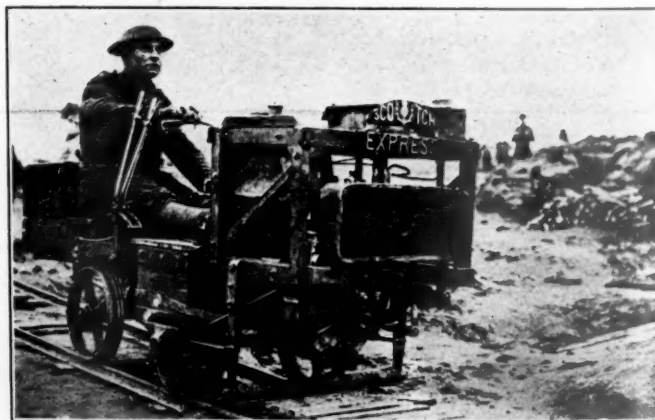
Obituary

J. D. Phillips, supervisor of signals of the Philadelphia & Reading, at Reading, Pa., died at his home in that city on October 27, of influenza.

Paul Elliott Walker, attorney of the Chicago, Rock Island & Pacific for Missouri and Kansas, died at his home in Topeka, Kan., on November 11, aged 42 years. He had been connected with the legal department of the Rock Island since November, 1902.

James L. Clark, division freight agent of the New York Central, at Chicago, died at his home in that city on November 4. He began railway work as a clerk for the Lake Shore & Michigan Southern in 1867. Subsequently he filled various minor positions with that road, the Hoosac Tunnel Line and the Lackawanna Line, until May, 1890, since which time he had been successively general agent, general western freight agent and division freight agent of the Lake Shore & Michigan Southern, and division freight agent of the New York Central since it absorbed the Lake Shore.

Albert A. Robinson, LL.D., formerly for 22 years connected with the Atchison, Topeka & Santa Fe, and subsequently for 13 years president of the Mexican Central, died at his home in Topeka, Kan., on November 7, at the age of 74. Mr. Robinson was born at South Reading, Vt., and was graduated from the University of Michigan in 1869. The University in June, 1900, conferred upon him the honorary degree of doctor of laws. He entered the railway service in 1869 as axman with the engineers' corps on the St. Joseph & Denver City. In 1871, he was appointed assistant engineer on the Atchison, Topeka & Santa Fe, in charge of location and construction, and two years later was made chief engineer. This office he held for 13 years, and also, in the meantime, was successively superintendent, assistant general superintendent, general superintendent and general manager. In 1886 he was chosen second vice-president, and for the five years ending with May 1, 1893, he was also general manager. He went to the Mexican Central in 1893, as president, in which position he remained until December 1, 1906.



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A Light Railway Engine Made from Parts of a Discarded Motor Car

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TWO SECTIONS—SECTION 2

Railway Age

INVESTMENTS SECTION

SECOND HALF OF 1918—NO. 20

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Bonds

Short Term Notes

Acceptances

The Organization of Our Railroads After the War

Clear Thinking Now About This Great Problem Is of the Utmost Importance If We Are to Avoid Mistakes

By E. P. Ripley

Former President, Atchison, Topeka & Santa Fe

I HAVE been much interested in reading the articles by John R. Hall, Frank W. Noxon and F. J. Lisman in the Investment Section of the *Railway Age*, and each of these gentlemen has treated the subject from his own angle—yet each arrives by his different route at these conclusions:

1. That the railroads will never go back to pre-war conditions;
2. That government ownership and operation is not only undesirable but dangerous;
3. That a combination or compromise policy, which shall preserve the private interest and thus foster efficiency while giving the government large authority and an interest in the profits, promises best for the country and for the transportation industry.

I imagine that this midway plan in its general outlines will commend itself to the average citizen. Of course, we have with us the state socialist who believes in the state's ability to manage all industry, but the great mass of our people know that our government never has transacted any business efficiently and economically at the same time, and that in the few cases where efficiency has been attained it has been in utter disregard of expense.

The troubles of our railroads have been due, of course, to a mistaken attitude on the part of Congress. Admission of this is found in the fact that as soon as the government obtained control it proceeded forthwith to do nearly everything it had previously prohibited and a good many things which may have been good but which the railroads would hardly have dared to suggest—this being true, it follows that a proper co-ordination of our railway system must be preceded

1. By obliteration of state lines as regards all transportation matters. Like all reforms this will be opposed by those who hold regulatory positions under the states;
2. By repeal of some of the national laws which are oppressive;
3. By enabling the nation to guarantee the credit and participate in the profits of the roads (rehabilitating those whose credit has been destroyed largely by its own acts) and receiving in return representation on the various boards of directors.

Since the majority of those who have given the subject any

attention are substantially agreed on these principles, it would seem not too early to consider a few of the details—and here we have wide divergence between Mr. Hall, who proposes one corporation, privately owned to be sure, but none the less an absolute monopoly, and Mr. Lisman who suggests a possible fifteen corporations dividing the country into groups and in his usual painstaking way points out methods by which his plan could in actual practice be carried out.

For myself, I must confess a feeling that the interest of the public requires competition—not such wild and unregulated competition as heretofore existed, but a healthy rivalry as to the accommodations and facilities offered the public, even though in an entirely different part of the country, so that the customs prevailing in New England, for example, may be compared with those of the Middle West or Pacific states. Competition of this kind alone would have its influence, but there would be direct competition in many cases which would have its effect also.

There is another reason which leads me to favor a number of regional roads rather than one vast corporation—viz., that no one man or body of men can successfully operate so large a system even with the best of assistants (this is not intended as a criticism on the director general whose first object is to win the war and who is directing his energies to that end, and who is doing to the public what it would not submit to for a moment under other conditions.) It is a common saying that 10,000 to 12,000 miles is the limit over which one man can project his personality or influence as manager. Personally, I should be inclined to increase this slightly, especially on lines of light traffic, but there certainly is a limit beyond which it is unsafe to go.

For these reasons Mr. Lisman's plan, or something like it, appeals to me; it is surrounded with difficulties, some of which he points out, but they do not seem to me insuperable, especially if the plan could have hearty backing by one or both of the great political parties or by a substantial majority in Congress, but it may as well be admitted that in the present disturbed conditions, the status after the war is likely to have scant consideration. Yet it is not too early to appoint a committee to consider the question and perhaps to draw an enabling act.



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Destroyed Bridge Across the Marne Near Chateau Thierry

Government Ownership and War Taxation*

Punitive Paternalism Either in the Regulation of Railroads or in the Imposition of War Taxes Is Unsound

By Otto H. Kahn

PATERNALISTIC CONTROL, even when entirely benevolent in intent, is generally harmful in effect. It is apt to be doubly so when, as sometimes occurs, it is punitive in intent. The history of our railroads in the last ten years is a case in point. In their early youth our railroads were allowed to grow up like spoiled, wilful, untamed children. They were given pretty nearly everything they asked for, and what they were not given freely they were apt to get somehow, anyhow. They fought amongst themselves and in doing so were liable to do harm to persons and objects in the neighborhood. They were overbearing and inconsiderate and did not show proper respect to their parent, i. e., the people. But the fond parent, seeing how strong and sturdy they were and on the whole, how hustling and effective in their work, and how, with all their faults of temper and demeanor, they made themselves so useful around the house that he could not really get along without them, only smiled complacently at their occasional mischief or looked the other way. Moreover, he was really too busy with other matters to give proper attention to their education and upbringing.

As the railroads grew towards man's estate and married and begot other railroads, they gradually sloughed off the roughness and objectionable ways of their early youth, and though they did not sprout wings, and though once in a while they still did shock the community, they were amazingly capable at their work and really rendered service of inestimable value.

But meanwhile, for various reasons and owing to sundry influences, the father had grown testy and rather sour on them. He cut their allowance, he restrained them in various ways, some wise, some less so, he changed his will in their disfavor, he showed marked preference to other children of his. And one fine day, partly because he was annoyed at the discovery of some wrongdoing in which, despite his repeated warnings, a few of the railroads had indulged (though the overwhelming majority were blameless) and partly at the prompting of plausible self-seekers or well-meaning specialists in the improvement of everybody and everything—one fine day he lost his temper and with it his sense of proportion. He struck blindly at the railroads, he appointed guardians (called commissions) to whom they would have to report daily, who would prescribe certain rigid rules of conduct for them, who would henceforth determine their allowance and supervise their method of spending it, etc.

And these commissions, naturally wishing to act in the spirit of the parent who had designated them, but actually being, as guardians are liable to be, more harsh and severe and unrelenting than he would have been or really meant to be, put the railroads on a starvation diet and otherwise so exercised their functions, with good intent, doubtless, in most cases, that after a while those railroads, formerly so vigorous and capable, became quite emaciated and several of them succumbed under the strain of the regime imposed upon them. And then, seeing their condition and having need, owing to special emergencies, of railroad services which required great physical strength and endurance, one fine morning the parent determined upon the drastic step of taking things into his own hands. And so forth. . . .

*An address before the National Industrial Conference Board, New York, October 10, 1918.

THE LEGISLATION OF 1909

To drop the style of story-telling: Individual enterprise has given us what is admittedly the most efficient railroad system in the world. It has done so whilst making our average capitalization per mile of road less, the scale of wages higher, the average rates lower, the service and conveniences offered to the shipper and the traveler greater than in any other of the principal countries.

It must be admitted that in the pioneer period of railroad development, and for some years thereafter, numerous things were done, and although generally known to be done, were tolerated by the government and the public, which should never have been permitted. But during the second administration and upon the courageous initiative of President Roosevelt these evils and abuses were resolutely tackled and a definite and effective stop put to most of them. Means were provided by salutary legislation, fortified by decisions of the Supreme Court, for adequate supervision and regulation of railroads.

The railroads promptly fell in line with the countrywide summons for a more exacting standard of business ethics. The spirit and practices of railroad administration became standardized, so to speak, at a moral level certainly not inferior to that of any other calling. It is true, certain regrettable abuses and incidents of misconduct still came to light in subsequent years, but these were sporadic instances, by no means characteristic of railroading methods and practices in general, condemned by the great body of those responsible for the conduct of our railroads, no less than by the public at large, and entirely capable of being dealt with by the existing law, possibly amended in nonessential features, and by the force of public opinion.

Unfortunately, the law enacted under President Roosevelt's administration was not allowed to stand for a sufficient length of time to test its effects. The enactment of new railroad legislation in 1909, largely shaped by congressmen and senators of very radical tendencies and hostile to the railroads, and acquiesced in by President Taft with ill-advised and opportunist complacency, established, for the first time in America, paternalistic control over the railroads. It was an unscientific and ill-advised statute, gravely defective in important respects and bearing evidence of having been shaped in heat, hurry and anger. Mr. Taft himself, it seems, has since recognized its faultiness, for he has repeatedly and publicly protested against the over-regulation, the starvation and the oppression of the railroads which were the inevitable and easy-to-be-foreseen consequences of its enactment.

The states, to extent that they had not already anticipated it, were not slow to follow the precedent set by the federal government. The resulting structure of federal and state laws under which the railroads were compelled to carry on their business, was little short of a legislative monstrosity.

LEGISLATION AND COMMISSION HAVE BROKEN DOWN

You all know the result. The spirit of enterprise in railroading was killed. Subjected to an obsolete and incongruous national policy, hampered, confined, harassed by multifarious, minute, narrow, and sometimes flatly contradictory regulations and restrictions, state and federal, starved as to rates in the face of steadily mounting costs of labor and materials—that great industry began to fall away. Initiative

on the part of those in charge became chilled, the free flow of investment capital was halted, creative ability was stopped, growth was stifled, credit was crippled.

The theory of governmental regulation and supervision was entirely right. No fair-minded man would quarrel with that. The railroads had exercised great, and in certain respects undoubtedly excessive power for a long time, and all power tends to breed abuses and requires limitations and restraints. But the practical application of that theory was wholly at fault and in defiance of both economic law and common sense. It was bound to lead to a crisis. It is not the railroads that have broken down, it is our railroad legislation and commissions which have broken down. And now the government, in the emergency of war, probably wisely and, in view of the prevailing circumstances, necessarily, has assumed the operation of the railroads.

The director general of railroads, rightly and courageously, proceeded to do immediately that which the railroads for years had again and again asked in vain to be permitted to do—only more so. Freight rates were raised 25 per cent, passenger rates in varying degrees up to 50 per cent. Many wasteful and needless practices heretofore compulsorily imposed were done away with. Passenger train service, for the abolition of some of which the railroads had petitioned unsuccessfully for years, was cut to the extent of an aggregate train mileage of over 47,000,000. The system of pooling for which since years many of the railroads had in vain endeavored to obtain legal sanction was promptly adopted, with the natural result of greater simplicity and directness of service and of considerable savings.

The whole theory under which intelligent, effective and systematic co-operation between the different railways had been made impossible formerly, was thrown into the scrap heap. Incidentally, certain services and conveniences were abolished, of which the railroad managements would never have sought to deprive the public, and the very suggestion of the abrogation of which would have led to indignant and quickly effective protest had it been attempted in the days of private control.

Lest this remark might be misunderstood, let me say that I have no word of criticism against Mr. McAdoo's administration of the railroads, as far as I have been able to observe it. I think, on the contrary, that he is entitled to great praise and that he has handled the formidable and complex task confided to him with a high degree of ability, fine courage, indefatigable energy, and with the evident determination to keep the running of the railroads clear of politics and to make them above all things effective instruments in our war effort.

GOVERNMENT OWNERSHIP

For a concise statement of the results accomplished elsewhere under government ownership I would recommend you to obtain from the public printer, and to read, a short pamphlet entitled "Historical Sketch of Government Ownership of Railroads in Foreign Countries," presented to the joint committee of Congress on interstate commerce by the great English authority, W. M. Acworth. It will well repay you the half hour spent in its perusal. You will learn from it that, prior to the war, about fifty per cent of the railways in Europe were state railways; that in practically every case of the substitution of government for private operation (with the exception, subject to certain reservations, of Germany) the service deteriorated, the discipline and consequently the punctuality and safety of train service diminished, politics came to be a factor in the administration and the cost of operations increased vastly. (The net revenue, for example, of The Western Railway of France in the worst year of private ownership was \$13,750,000, in the fourth year of government operation it fell to \$5,350,000.) He quotes the eminent French economist, Leroy-Beaulieu, as follows:

"One may readily see how dangerous to the liberty of citizens the extension of the industrial regime of the state would be, where the number of functionaries would be indefinitely multiplied. . . . From all points of view the experience of state railways in France is unfavorable as was foreseen by all those who had reflected upon the bad results given by the other industrial undertakings of the state. . . . The state, above all, under an elective government, cannot be a good commercial manager. . . . The experience which we have recently gained has provoked a very lively movement, not only against acquisition of the railways by the state, but against all extension of state industry. I hope . . . that not only we, but our neighbors also may profit by the lesson of these facts."

Mr. Acworth mentions as a characteristic indication that after years of sad experience with governmentally owned and operated railways, the Italian government, just before the war, started on the new departure (or rather returned to the old system) of granting a concession to a private enterprise which was to take over a portion of the existing state railway, build an extension with the aid of state subsidies, and then work on its own account both sections as one undertaking under private management.

I may add, as a fact within my own knowledge, that shortly before the outbreak of the war the Belgian government was studying the question of returning its state railways to private enterprise and management.

Mr. Acworth relates a resolution unanimously passed by the French senate a few years after the state had taken over certain lines, beginning: "The deplorable situation of the state system, the insecurity and irregularity of its workings." He gives figures demonstrating the invariably greater efficiency, economy and superiority of service of private management as compared to state management in countries where these two systems are in operation side by side. He treats of the effect of the conflicting interests, sectional and otherwise, which necessarily come into play under government control when the question arises where new lines are to be built and what extensions to be made of existing lines.

He asks: "Can it be expected that they (these questions) will be decided rightly by a minister responsible to a democratic legislature, each member of which, naturally and rightly, makes the best case he can for his own constituents, while he is quite ignorant, even if not careless, of the interests, not only of his neighbor's constituency, but of the public at large?" And he replied: "The answer is written large in railway history. . . . The facts show that parliamentary interference has meant running the railways not for the benefit of the people at large, but to satisfy local and sectional or even personal interests." He maintains that in a country governed on the Prussian principles railroad operation and planning may be conducted by the government with a fair degree of success, as an executive function, but in democratic countries, he points out that in normal times "it is the legislative branch of the government which not only decides policy but dictates always in main outline, often down to the detail of a particular appointment or a special rate, how the policy shall be carried out."

For corroboration of this latter statement we need only turn to the array of statutes in our own states, which not only fix certain railroad rates by legislative enactment, but deal with such details as the repair of equipment, the minimum movement of freight cars, the kind of headlights to be used on locomotives, the safety appliances to be installed, etc.—and all this in the face of the fact that these states have public service commissions whose function it is to supervise and regulate the railroads.

The reason why the system of state railways in Germany was largely free from most, though by no means all, of the unfavorable features and results produced by government ownership and operation elsewhere, is inherent in the habits and conditions created in that country by generations of autocratic and bureaucratic government. But Mr. Acworth points out very acutely that while German manufacturers, merchants, financiers, physicians, scientists, etc., "have taught the world a good deal in the twenty years preceding the war, German railway men have taught the world

nothing." And he asks: "Why is this?" His answer is: "Because they were state officials, and, as such, bureaucrats and routiniers, and without incentive to invent and progress themselves or to encourage or welcome or even accept inventions and progress."

"It is the private railways of England and France, and particularly of America, which have led the world in improvements and new ideas, whilst it would be difficult to mention a single reform or invention for which the world is indebted to the state railways of Germany."

The question of the disposition to be made of the railroads after the war is one of the most important and far-reaching of the post-bellum questions which will confront us. It will be one of the great test questions, the answer to which will determine whither we are bound.

COMPETITIVE SERVICE

And, it seems to me, one of the duties of business men is to inform themselves accurately and carefully on this subject, so as to be ready to take their due and legitimate part in shaping public opinion, and indeed to start on that task now, before public opinion, one-sidedly informed and fed of set purpose with adroitly colored statements of half truths, crystallizes into definite judgment.

My concern is not for the stock and bondholders. They will, I have no doubt, be properly and fairly taken care of in case the government were definitely to acquire the railroads. Indeed, it may well be, that from the standpoint of their selfish interests, a reasonable guarantee or other fixed compensation by the government would be preferable to the financial risks and uncertainties under private railroad operation in the new and untried era which we shall enter after the war. I know, indeed, that not a few large holders of railroad securities take this view and therefore have this preference.

Nor do I speak as one who believes that the railroad situation can be restored just as it was before the war. The function, responsibility and obligation of the railroads as a whole are primarily to serve the interests and economic requirements of the nation. The disjointed operation of the railroads, each one considering merely its own system (and being under the law practically prevented from doing otherwise) will, I am sure, not be permitted again.

The relinquishment of certain features of our existing legislation, the addition of others, a more clearly defined and purposeful relationship of the nation to the railroads, involving amongst other things possibly some financial interest of the government in the results of railroad operations are certain to come from our experiences under government operation and from a fresh study of the subject in case the railroads, as I hope, are returned to private management.

Personally I believe that in its underlying principle the system gradually evolved in America, but never as yet given a fair chance for adequate translation into practical execution, is an almost ideal one. It preserves for the country, in the conduct of its railroads, the inestimable advantage of private initiative, efficiency, resourcefulness and financial responsibility, while at the same time, through governmental regulation and supervision, it emphasizes the semi-public character and duties of railroads, protects the community's rights and just claims and guards against those evils and excesses of unrestrained individualism which experience has indicated.

It is, I am profoundly convinced, a far better system than government ownership of railroads, which, wherever tested, has proved its inferiority except, to an extent, in the Germany on which the Prussian Junker planted his heel and of which he made a scourge and a horrible example to the world; and the very reasons which have made state railways measurably successful in that Germany are the reasons which would make government ownership and operation in America a menace to our free institutions, a detriment to our racial characteristics and a grave economic disservice.

PUNITIVE TAXATION

I have spoken of the treatment of our railroads in the past 10 years as "punitive paternalism." In some respects this same term may be applied to our existing and proposed war taxation.

Of course, the burden of meeting the cost of the war must be laid according to capacity to bear it. It would be crass selfishness to wish it laid otherwise and fatuous folly to endeavor to have it laid otherwise.

We all agree that the principal sources of war revenue must necessarily be business and accumulated capital, but these sources should not be used excessively and to the exclusion of others. The structure of taxation should be harmonious and symmetrical. No part of it should be so planned as to produce an unscientific and dangerous strain.

The science of taxation consists in raising the largest obtainable amount of needed revenue in the most equitable manner, with the least economic disturbance and, as far as possible, with the effect of promoting thrift.

The House bill proposes to raise from income, excess or war profit and inheritance taxes \$5,686,000,000 out of an estimated total of \$8,182,000,000. In other words, almost 70 per cent of our stupendous total taxation is to come from these few sources. It seems to me that the effect and meaning of this is to penalize capital, to fine business success, as well as thrift and self-denial practiced in the past, thereby tending to discourage saving.

The House bill fails, on the other hand, to impose certain taxes the effect of which is to promote saving. Intentionally or not, yet effectively, it penalizes certain callings and sections of the country and favors others.

Let me say at the outset that my criticism does not refer to the principle of an 80 per cent war profits tax. Indeed, I have from the very beginning advocated a high tax on war profits. To permit individuals and corporations to enrich themselves out of the dreadful calamity of war is repugnant to one's sense of justice and gravely detrimental to the war morale of the people. Strictly from the economic point of view, the 80 per cent war profits tax is not entirely free from objection. Whether England did wisely on the whole in fixing the tax at quite so high a rate is a debatable point, and is being questioned by some economists of high standing in that country, not from the point of view of tenderness for the beneficiaries from war profits, but from that of national advantage.

Moreover, conditions in America and England are not quite identical, and I believe it to be a justifiable statement that British industry is better able to stand so high a tax than American industry, for reasons inherent in the respective business situations and methods.

However, everything considered, circumstances being what they are, I believe the enactment of the proposed 80 per cent war profits tax to be expedient, provided that, like in England, the standard of comparison with prewar profits is fairly fixed and due and fair allowance made, in determining taxable profits, for such bona fide items of depreciation and other write-offs as a reasonably conservative business man would ordinarily take into account before arriving at net profits.

Among the principles of correct and effective taxation which are axiomatic are these:

1. No tax should be so burdensome as to extinguish or seriously jeopardize the source from which it derives its productivity. In other words, do not be so eager to secure every possible golden egg that you kill the goose which lays them.

2. In war time, when the practice of thrift is of more vital importance than ever to the nation, one of the most valuable by-products which taxation should aim to secure is to compel reduction in individual expenditures.

3. Taxation should be as widely diffused as possible, at however small a rate the minimum contribution may be fixed, if only to give the greatest possible number of citizens an

interest to watch governmental expenditure, and an incentive to curb governmental extravagance.

It may safely be asserted that our war taxation runs counter to every one of these tested principles.

THE EXPERIENCE OF ENGLAND

The characteristic difference between the House bill and the revenue measures of Great Britain (I am not referring to those of France and Germany, because they are incomparably less drastic than ours or Great Britain's) is, first, that we do not resort to consumption taxes, and only to a limited degree to general stamp taxes, and, secondly, that our income tax on small and moderate incomes is far smaller, on large incomes somewhat smaller, and on the largest incomes a great deal heavier.

The House rate of taxation on incomes up to, say, \$5,000, averages only one-fifth of what it is in England; the House rate of taxation on maximum incomes is approximately 50 per cent higher than it is in England. Moreover, married men with incomes of less than \$2,000 are entirely exempted from taxation in this country. In England all incomes from \$650 on are subject to taxation.

I believe, on the whole, our system of gradation is juster than the English system, but I think we are going to an extreme at both ends. And it must be borne in mind that our actual taxation of high incomes is not even measured by the rates fixed in the House bill, because to them must be added state and municipal taxes. There must further be added what to all intents and purposes is, though a voluntary act, yet in effect for all right-minded citizens tantamount to taxation, namely, a man's habitual expenditures for charity and his contributions to the Red Cross and other war relief works.

The sentimental and thereby the actual effect of extreme income taxation is not confined to the relatively small number of people in possession of very large incomes directly affected by it. The apprehension caused by the contemplation of an excessively high ratio of taxation is contagious and apt to react unfavorably on constructive activity.

It is highly important that taxation should not reach a point at which business would be crippled, cash resources unduly curtailed and the incentive to maximum effort and enterprise destroyed. And it should not be forgotten that both theoretically and actually the spending of money by the government cannot and does not have the same effect on the prosperity of the country as productive use of his funds by the individual.

If all the European nations have stopped during the war at a certain maximum limit of individual income and inheritance taxation, even after four years of war, the reason is surely not that they love rich men more than we do or that they are less democratic than we are. The reason is that these nations, including the financially wisest and most experienced, recognize the unwisdom and economic ill effect under existing conditions of going beyond that limit.

The same observations hold good in the case of our proposed inheritance taxation (maximum proposed here 40 per cent, as against 20 per cent maximum in England, and much less in all other countries). And again, there are to be added to federal taxation the rates of state legacy and inheritance taxation.

Inheritance taxation, moreover, has that inevitable element of unfairness that it leaves entirely untouched the wastrel who never laid by a cent in his life, and penalizes him who practiced industry, self-denial and thrift. And it cannot be too often said that the encouragement of thrift and enterprise is of the utmost desirability under the circumstances in which the world finds itself, because it is only by the intensified creation of wealth through savings and production that the world can be re-established on an even keel after the ravages and the waste of the war.

Furthermore, business men of necessity have only a lim-

ited amount of their capital in liquid or quickly realizable form, and through the absorption by the inheritance tax of a large proportion of such assets many a business may find itself with insufficient current capital to continue operations after the death of a partner. This effect is not only unfair in itself, but is made doubly so as being a discrimination in favor of corporations as against private business men and business houses, inasmuch as corporations are, of course, not amenable to inheritance taxation.

While in the case of the rich we discourage saving by the very hugeness of our taxation, or make it impossible, we fail to use the instrument of taxation to promote saving in the case of those with moderate incomes. And the enormous preponderance of saving which could and should be effected does not lie within the possibilities of the relatively small number of people with large means, but of the huge number of people with moderate incomes.

Moreover, while the rich, in consequence of taxation, limitation of profits, etc., have become less able to spend freely since our entrance into the war, workingmen and farmers, through increased wages, steadier employment and higher prices of crops, respectively, have become able to spend more freely.

Workingmen are in receipt of wages never approached in pre-war times, many of them making incomes a good deal higher than the average professional man, while the profits of business, generally speaking, are rather on a declining scale and certain branches of business have been brought virtually or even completely to a standstill.

Of our total national income, conservatively estimated at, say, \$40,000,000,000 for the last year before our entrance into the war, i. e., the year 1916, it is safe to say that not more than \$2,000,000,000 went to those with incomes of, say, \$15,000 and above, while \$38,000,000,000 went to those with lower incomes.

A carefully compiled statement issued by the Bankers Trust Company of New York estimates the total individual incomes of the nation for the fiscal year ending June 30, 1919, at about \$53,000,000,000, and calculates that families with incomes of \$15,000 or less receive \$48,250,000 of that total; or, applying the calculation to families with incomes of \$5,000 or less, it is found that they receive \$46,000,000,000 of that total.

CONSUMPTION TAXES

While the House bill imposes luxury and semi-luxury taxes, it fails—as I have mentioned before—to resort to consumption taxes of a general kind—a deliberate but, in my opinion, unwarrantable omission.

My advocacy of consumption and similar taxes, such as stamp taxes of many kinds, is not actuated by any desire to relieve those with large incomes from the maximum of contribution which may wisely and fairly be imposed on them. I advocate consumption and general stamp taxes—such as every other belligerent country without exception has found it well to impose—because of the well attested fact that while productive of very large revenues in the aggregate they are easily borne, causing no strain or dislocation, and automatically collected; and because of the further fact that they tend to induce economy, than which nothing is more important at this time, and which, as far as I can observe, is not being practiced by the rank and file of our people to a degree comparable to what it is in England and France.

The tendency of the House bill is to rely mostly on heavy taxation—in some respects unprecedentedly heavy—of a relatively limited selection of items. I am—as I have already said—in favor of the highest possible war profits tax and of at least as high a rate of income and inheritance taxation during the war as exist in any other country. But apart from these and a few other items which can naturally support very heavy taxation, such, for instance, as cigars and

tobacco, I believe that the maximum of revenue and the minimum of economic disadvantage and dislocation can be secured not by the very heavy taxation of a relatively limited selection, but by comparatively light taxation distributed over a vast number of items. I believe such taxes would be productive enough to make good the impending revenue losses from prohibition.

I think, for instance, the imposition of a tax of 1 per cent on every single purchase exceeding, say, two dollars (the tax to be borne by the purchaser, not by the seller, would be productive of a large amount of revenue and be harmful to none. A similar tax was imposed in the course of the Civil War and appears to have functioned so well and met with such ready acceptance that it was not repealed until several years after the close of that war.

There is apparently small limit to the zeal of many politicians and others when it is a question of taxing business and business men, especially those guilty of success. We are, I believe, justified in inquiring to what extent there is a relation between this tendency and political considerations which ought to be remote from the treatment of economic subjects such as taxation.

Let us take, as an instance, the case of the farmer. I do not pretend to judge whether in these war times the farmers of the country are bearing an equitable share of taxation in proportion to other callings or not. I certainly recognize that they are entitled to be dealt with liberally, even generously, for I know the rigors of the farmers' lives, the ups and downs of their industry's productivity, and fully appreciate that their work lies at the very basis of national existence. Everything that can fairly make for the contentment, well being and prosperity of the farmer is to be wholeheartedly welcomed and promoted.

Yet we cannot avoid noticing that the average value of farm lands in this country is estimated to have increased between 1900 and 1918 more than 200 per cent, that the value of farm products has been vastly enhanced, but that according to the latest published details of income tax returns, the farmer contributes but a very small percentage to the total income tax collected. Of 22 selected occupations the farmers' class contributes the least in the aggregate, although it is numerically the largest class in the country.

Let it be clearly understood that I have not the remotest thought of suggesting "tax dodging" on the part of the farmers. I know well how fully they are doing their part towards winning the war and am entirely certain that they are just as ready to carry patriotically their due share of the financial cost of achieving victory as the splendid young fellows taken from the farms, many of whom I met in Europe, have been ready to bear their full share of the cost in life and limb of achieving victory.

The point of my question is not the action and attitude of the farmer. But here is a great industry exempt from the excess profit and war profit tax and apparently not effectively reached by the income tax, which is entirely natural, because in this case the income tax can neither be retained at the source nor are the large body of the farmers, many of whom do not keep, and cannot be expected to keep, books, in a position to determine their taxable income.

Is it conceivable that the politicians who are so rigorous in their watchfulness that no business profit shall escape the tax-gatherer, would not devise means to lay an effective tax if the same situation existed in a business industry?

The point of my question is, taking the case of the farmers as an instance, whether in framing our system and method of taxation, the steady aim has been to ascertain impartially what is equitable and wisely productive of revenue and to act accordingly, or whether considerations of the anticipated effect of taxation measures upon the fortunes of individual legislators or of their party, have been permitted unduly to sway their deliberations and conclusions.

Turning aside from this interrogation mark, I will only add, in returning to our general scheme of taxation, that there are numerous taxes of a tried and tested and socially just kind—some of them applied in this country during the Civil War and the Spanish War—which would raise a very large amount of revenue and yet would be little felt by the individual. Some of them have been suggested to our legislators, but have not found favor in their eyes. Their non-imposition, taken together with the entire character of our taxation program, the burden of which falls to an enormously preponderant extent upon the mainly industrial states and the business classes, not only proportionately, which, of course, is just, but discriminatingly, which is not just, seems hardly explainable except on the theory that the intention of those who were primarily in charge of framing that program was punitive and corrective and that they were influenced—though I am willing to believe unconsciously—by sectional and vocational partiality.

The fact that the revenue bill was passed in the House by a unanimous vote does not mean, of course, that it met with unanimous approval on the part of Congressmen. The debate shows this. The bill, as reported after months of labor, either had to be approved practically as it stood or rejected and returned to the committee. It is not possible for a body of 400 men to deal in a detailed manner with a subject so complex as a taxation measure of the magnitude of the present one.

The bill could not be made over or materially amended in the House. In view of the urgency of the emergency and the vital need to raise the sum asked for by the Treasury, no patriotic course was open to the House but to accept the bill and pass it up to the Senate.

I know it is not popular to say things in criticism of war burdens of a financial nature. One's motives are liable to be misunderstood or misinterpreted and he is very apt to have it scornfully pointed out to him how small relatively is the sacrifice asked of him compared with the sacrifice of position, prospects and life itself, so willingly and proudly offered by the young manhood of the land.

It is a natural and effective rejoinder, but it is not a sound or logical one. Heaven knows my heart goes out to our splendid boys, and my admiration for their conduct and achievements and my reverence for the spirit which animates them knows no bounds. But I am acquainted with hundreds of business men who bemoan their gray hair and their responsibilities which prevent them from having the privilege of fighting our foe arms in hand.

And I know no American business man worthy of the name who would not willingly give his life and all his possessions if the country's safety and honor required that sacrifice.

A NEW RAILWAY IN SANTO DOMINGO.—A line for a railroad from the mines to La Piedra on the Ozama River has been located and staked out. La Piedra is considered a good place for establishing a terminal. It is planned to have the railroad yards at this point and to build a roundhouse, shops and stores, as all the material and machinery for the mines will be handled there. The country through which the proposed railroad is to run will permit of easy construction, and as there is but one important river to cross, a 100-ft. steel bridge with reinforced concrete abutment is contemplated.—*Commerce Reports*.

SPANISH RAILWAY RATES.—The federation of employees of the Madrid, Saragossa & Alicante Railway of Spain has addressed a petition to the government in which it recognizes that with present excessive costs the company cannot pay its employees the wages demanded by increased costs of living, and that it is imperative that the company should be authorized to raise its rates in the same way as rates have been raised in every other country.

Problems of the National Banks in War Time*

In War Times Bank Credits Are Often Adjusted to Conditions
Instead of Creating Them and Thus Are an Effect, Not a Cause

By W. P. G. Harding

Governor of the Federal Reserve Board

THE NATIONAL BANKS of the United States have in other times and in other wars proved their loyalty and efficiency. In fact they were born in the midst of the convulsions of a country torn by civil war and their creation is due to the desperate needs of the nation in those dreadful days.

Through the establishment of the national banking system not only was a market afforded for United States bonds, but facilities were provided for the issuance of a national currency capable of circulating without discount in all sections of the country. So rapidly did the national banking system grow that in 1865, shortly after the close of the Civil War, there were 1,517 national banks, having aggregate assets of \$1,359,867,074, included in which were United States bonds to secure circulation of \$272,634,200 and about \$75,000,000 government bonds held as investments.

In 1898, when we were at war with Spain, consciousness of our banking strength undoubtedly had much to do with the ease with which \$200,000,000 of 3 per cent bonds were sold to the public at a substantial premium; but the national banks co-ordinated under the Federal reserve system are now engaged in the most stupendous work they have ever undertaken, and in according to the national banks their meed of praise, I do not wish to slur nor underestimate the importance of the work which has been done by the state banks, savings banks and trust companies as well. There is no question, however, that through the operation of the Federal Reserve system the vast fiscal undertakings of the government have been successfully carried out thus far without any undue disturbance to our financial structure and without a money panic or crisis of any kind.

For three years the burden of supporting the Federal Reserve system was borne almost entirely by the national banks—all through those times when many of the banks could not perceive that any substantial benefit would be likely to enure from membership, and when stock in the Federal Reserve banks was looked upon as a dead investment. Even a year ago, five months after the United States had entered the war, there was only 86 non-national banks which were members of the Federal Reserve system. It is gratifying to note, however, that henceforth the responsibilities and privileges of membership will be shared by the state institutions which are now coming over in constantly increasing numbers and that today about 750 state banks and trust companies are members, with total resources of nearly six and three-quarters billions of dollars.

The problems of the American banker have always been more complex and difficult than those of banks in other countries and their work is more varied and exacting. This is due, in part, to our wide expanse of territory, and to the amount of pioneering which has to be done incident to the building up and development of a new country. It is due also to the fact that the spirit of American institutions demands independence of action and that the tendency in this country has been toward a large number of independent banking units, most of them of small and moderate capital, rather than toward a compact group of highly capitalized banks conducting their operations throughout the country

through the medium of branches. The need of some means of co-ordinating this large number of independent banks, or reserving a portion of their resources for the common defense of the financial front, the necessity for providing a more elastic currency which could expand and contract in accordance with business requirements, and of establishing a broad discount market, are some of the causes which led to the establishment of the Federal Reserve system. It is not my intention, however, to attempt to discuss your routine work or your every day problems, but I wish instead to touch upon some of those questions which confront you, and those militant duties which are imposed upon you, in your work of holding the financial trenches in the great battle now raging for liberty and civilization.

The Federal Reserve Board, from the time when it became evident that this country would be forced into the war, has spared no pains to fortify the position of the Federal Reserve banks, in order to enable them to meet all legitimate demands which may be made upon them and to render the greatest amount of assistance to the member banks in the performance of their war time duties to the government. Upon the recommendation of the Federal Reserve Board, Congress amended the Federal Reserve Act in several important particulars on June 21, 1917. The effect of these amendments has been to bring into the system a large number of state banks, besides enabling the Federal Reserve banks more effectively to control the country's gold which had been widely diffused, having been used for purposes of circulation and held in vaults of member and non-member banks. As you know, all the lawful reserves of member banks are now kept on deposit with the Federal Reserve banks, and as Federal Reserve notes may be issued without limit against deposits of gold or gold certificates, the gold holdings of the Federal Reserve banks have been augmented to an amount exceeding \$2,000,000,000, and the discounting power of the Reserve banks has thereby been greatly increased. Both the member and non-member banks have been urged repeatedly to transfer their gold as it accumulates to the Federal Reserve banks, and the appeal has not been in vain, for the response has been very general and gratifying. In the vaults of the Reserve banks gold is available either as a basis of new note issues or as a means of extending their loaning facilities, while in circulation or distributed among the 25,000 or more commercial banks, it is of no more value than any other form of currency. There still remains in circulation and in bank vaults, however, about \$900,000,000 in gold certificates and coin, most of which can be deposited and should be deposited, their place to be taken as far as necessary by Federal Reserve notes. In mobilizing the gold of the country into the vaults of the Federal Reserve banks, it is not the intention to increase the volume of loans beyond the amount actually required, but these are war times, and any inability on the part of Federal Reserve banks to respond to legitimate demands made upon them would be disastrous. It is clear that in proportion as the gold holdings of the Federal Reserve banks are increased, the ability of such banks to extend accommodation to other banks or to issue notes is enlarged. As reserve holdings are curtailed, the lending power of the banks is correspondingly reduced.

*An address before the National Bank section of the American Bankers' Association at Chicago, September 25, 1918.

The national banks of the country can render good service at this time by informing the people in their respective communities of the absolute falsity of the statements which have been made occasionally and which appear to be the result of a deliberate propaganda, that it is the intention of the government to confiscate bank deposits. Such a statement is absurd upon its face, but is well calculated to alarm the ignorant, and, although it has been denied and denounced in the strongest terms by the Secretary of the Treasury and other high authorities, it is evident, from the proportion of the money paid out every week in payrolls which does not return to the banks, that large amounts in the aggregate are being hoarded or carried upon their persons by workmen who are now receiving unusually high wages. Banks should give especial attention to the problem of bringing into sight any money hoarded in their communities, and should urge its investment in war savings stamps or Liberty Bonds, as well as the establishment of bank accounts. There is good reason to believe that the present is an opportune time, in industrial communities especially, for organizing systematic campaigns for bringing concealed money into the vaults of the banks, or for effecting its exchange for government obligations.

One of the most important functions of any bank is the granting of credits. This is a power which should be exercised with prudence and discretion in any circumstances, but under present conditions there are many new and perplexing features to be considered. As the paramount business of this country at present is war, and as the government is the largest purchaser of all essential commodities, it is clear that the banks of the country should do their part, not only in aiding the government to obtain the funds and credits needed, but that they should so readjust their own lending operations as to contribute most effectively toward supplying the government with necessary articles and commodities. Therefore the question of credit conservation has been a vital one for months past. War expenditures are essentially different from any which are ordinarily made in times of peace. Instead of contributing toward a permanent addition to the national wealth, the large payments which the government is making for the maintenance and equipment of our military and naval establishments involve waste and destruction—inevitable concomitants of war. This process necessarily tends to inflation, which, together with concentrated demand and the need for quick deliveries, brings about rapid advances in the price of necessities. Infinities such as are dealt with in higher mathematics have no place in the arithmetic of war financing, even though the figures run into the billions. The supply of credit, of goods, and of man power is limited, and as far as possible these resources should be conserved and set aside for the use of the government, whose abnormal demands—inevitable and necessary in the present circumstances—must be counteracted by greater economy on the part of our civilian population, whose efforts should be directed toward decreasing the normal waste incident to our business pursuits and to our everyday life.

Credit extended for non-essential purposes involves the use of labor, of transportation, of material, and of reserves which ought to be kept free for purposes of the government. Unrestricted credit means unnecessary competition with the government, and tends to impede and delay its operation, and needlessly advances prices.

At a time when the supreme business of the country is war, it is idle to talk of business as usual, for our accustomed business and personal habits cannot in many cases be continued without interfering with the government's work and the consequent infliction of serious injury upon the nation. Uncle Sam, at this time, is a world banker—he is extending credits in large amounts to foreign countries associated with him in the war, and his power to continue to

play the part of "Uncle" in the financial sense depends upon the extent of his resources in men, goods and gold, and the avoidance of unnecessary credit. Needless recourse to the facilities of the Federal Reserve banks weakens proportionately his gold reserve, and this gold reserve is the financial backbone of civilization. Any waste of the raw materials and manufactured products of the country adds to our financial burdens by increasing the amount which we must import from other countries, and such waste at the same time reduces the volume of goods which should be available for export purposes—the best means of paying for imported commodities.

The far-sighted banker does not content himself by considering merely present problems, but he turns his eyes to the future and endeavors to lift the veil in order that he may see the shadow of coming events and make his plans accordingly. Many thoughtful bankers feel, therefore, that the preservation of our economic strength is of the greatest importance in making provision for that period of readjustment which will follow inevitably the re-establishment of peace. By refraining from buying luxuries and by restricting the use of necessities to the actual requirements of health and reasonable comfort, a reserve purchasing power can be created which will be of the greatest value in bridging over our industries during the period of reconstruction which will follow the war, when "swords will be beaten into plow shares" and Mars will give place to Mercury and Ceres.

An intelligent and prudent use of credit will be an important factor in strengthening the national resources during the period of the war, in aiding its successful prosecution, besides maintaining our economic strength for the time when our armies will return to the employments of peace. It is important, however, that a wise discretion should be exercised and that there should be a careful discrimination between essential, less essential, and non-essential credits.

It is difficult to suggest any fixed and definite rule to govern in distinguishing between these various classes of credits. A loan might be desired for what appears at first glance to be a non-essential purpose, and yet failure to obtain the credit might create a condition which might indirectly have a distinctly harmful effect upon the ability of productive enterprises in the community to obtain credit. It is important, therefore, that bank officers should inform themselves as to the ultimate use to which the proceeds of a proposed loan will be diverted. Present conditions fully justify the banks in taking such steps as may be necessary to restrain speculation, but at the same time, a general refusal to make loans on good security would seriously impair the liquidity of investments and would force liquidation which might disturb very seriously the whole financial situation. It is important to avoid sharp and radical readjustments of credit and wherever possible lines should be reduced without undue hardship to the borrower or without causing a shock which would render the granting of necessary credits more difficult.

The problem of non-essential credits is, however, not entirely one for the consideration of the banks. The question will be determined for them in many instances by the Capital Issues Committee and by other governmental bodies such as the War Industries Board, which has large powers in the determination of the character and quantity of production and of priorities in the delivery of materials and goods.

In normal times great enterprises and large developments are the result of credits previously arranged by bankers, but the military necessities of today have changed the order so that in many cases developments are predetermined, and bank credits are adjusted to conditions instead of creating them, thus becoming an effect instead of a cause. Your problems, gentlemen, are by no means confined to placing proper restrictions upon non-essential or less essential credits, but they include means of sustaining through adequate

credits, the vast number of enterprises and industries whose operations are essential or contributory to the conduct of the war and to the health and necessary comfort of the public. In addition to direct advances to the government, you are being called upon to furnish funds for use of the mercantile community and for the payrolls of mining and manufacturing and transportation companies, and for the production and movement of crops and livestock. In these operations you will find your membership in the Federal Reserve System of the greatest value, for not only can you rediscount freely with your Federal Reserve Banks the notes which represent your loans in most of these transactions, but you can effect through these banks such exchange transfers as you may desire and can call upon them to send you any currency that you may need. Shipments from Reserve Banks or branches can reach most of you within twenty-four hours, and in order to facilitate your transactions and to encourage a freer movement of domestic exchange, serious consideration is now being given to having the Federal Reserve Banks absorb all costs incident to transfers of currency for member banks, both from and to Federal Reserve Banks. You have also recourse to the War Finance Corporation, which is authorized to make advances to banks, bankers, or trust companies, and to savings banks, upon terms and conditions set forth in Sections 7 and 8 of the War Finance Corporation Act.

Your attention is directed to the great importance of increasing our supplies of foodstuffs, of cotton and wool, of coal, and of all manufactured articles of an essential character, and it is hoped that you will extend your credit lines with this object in view as far as may be consistent with the principles of sound banking and business prudence. While it is desirable that you should remain free to exercise your own discretion as regards the security of loans and the details of your business, it is necessary, nevertheless, that we should all work together in carrying out a general policy. The exigencies of the times require that banking policy must be determined in Washington to a greater extent than would normally be the case, but every confidence is felt that the splendid patriotism which has been manifested in the past by national bankers in the hour of the nation's peril, will continue to be exhibited today when our country is engaged in the greatest war of all history, and that through your cordial and effective co-operation complete victory will crown our military undertakings, to be followed by a lasting and American peace.

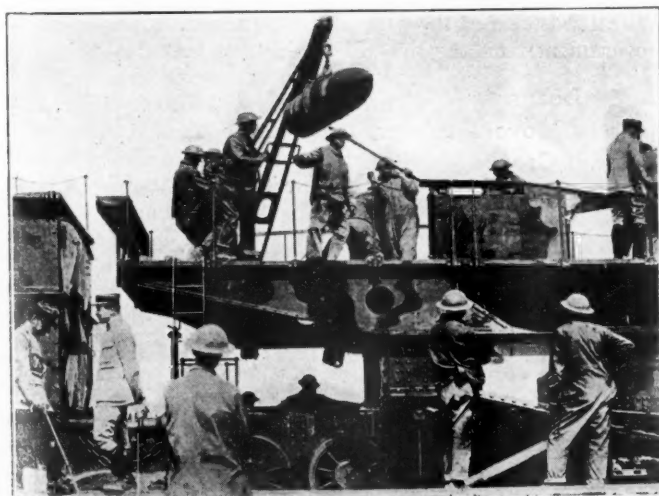


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Swinging a Big Shell from Ammunition Car to the Gun

Railway Age

INVESTMENTS SECTION

WILLIAM E. HOOPER,

Financial Editor.

The economic events of the last three months can only be seen in their proper significance by placing them against the background of the successful Fourth Liberty Loan Campaign and the prospects of an early peace. Preliminary estimates of the number of people who subscribed to the Fourth Liberty Loan puts the number at 21,000,000. It must be remembered that the great majority of the individuals subscribing did so on some kind of an installment plan. This means that during the period of installment payments on subscriptions to loans, which period, in some cases, extends as far as fifty weeks, there will be a saving on the part of one out of every five persons in this country. Every form of industry will, to a greater or less extent, feel the effects of this economizing. The best that any other country, ally, enemy or neutral, has done, in its sale of internal loans, has been to get subscribers from one out of every nine. The fact that the United States could show one out of every five as subscribers, of course, emphasizes once again the much higher standard of living and wealth in this country than in any other, but it also is of great importance in considering the trend of investment conditions, the prospects for prosperity in any trade or industry, and, furthermore, is an indication of a state of mind which may be of even more importance than the actual dollars which are withheld from expenditure on personal wants to be loaned as a credit to the national government.

Industry has passed beyond the stage in this country where it is manufacturing the tools to manufacture war necessities.

War Stocks and Peace Stocks

It is now, and has been for some months, using the plants, which in the first six to nine months of the war it built under such great pressure, to manufacture the products actually needed in the government's conduct of the war. Munitions play a smaller part in the grand total of these requirements than might be at first expected. As a matter of fact, as things stand today, it is probable that orders for munitions could be immediately stopped and comparatively few of the manufacturing concerns of the country would be vitally affected. On the other hand, the volume of business which the manufacturing plants of the country are doing for the government, exclusive of making munitions, is stupendous. To fit themselves to do this business, a great number of companies had to make extensive additions to their plants at a time when labor and material were higher than ever before. Only a part of the huge capital investment required has been financed even by short term notes or bonds, and is today being temporarily carried through bank loans. Except for such machinery as is used in making shells, explosives and arms and artillery, that which is now at work for the government can be almost without alteration used in manufacturing for the general public; that is, for the ordinary consumer demands. The great capital investment necessitated by the war does not, therefore, need amortizing before peace. Rather the problem is as to providing work to keep the plant which has now been created busy under peace conditions.

The law of supply and demand has been, in this country, very largely superseded by price fixing by law. This funda-

Eliminating Competition

mentally changes the point of view from which the financial status of any particular company, engaged in industry, must be studied. Vulnerability to competition or immunity therefrom has been the determining factor in the failure or success of innumerable business enterprises. Eliminate the element of price competition and a quite new aspect is given to statements of earnings and profits. The number of different articles and products of industries with a fixed price made by the United States government is much larger than the average man realizes. This list ranges from shoes to wheat, from coal to butter. The fixing of the price which the government will pay for articles is not a new experiment, but what is being done now is for the government to fix the price which the private consumer shall pay in his private transaction with the retailer. This is still an experiment; not only is it impossible to say that it has been a success or a failure, but the very definition of success or failure has not as yet been clearly decided upon. The government might view the experiment as successful if it temporarily produced the results which the government desired, although the man vitally interested in a particular industry might view the results as a disastrous failure, if, in the long run, sources of natural wealth were left undeveloped, which otherwise would have been developed, or the standard of product, turned out in the industry, was permanently lowered. It is essential that an investor in a particular industry define clearly to himself what he means by successful price fixing and even if the particular industry in which he is interested is not today subject to price regulation by the government, the possibilities of such a policy being adopted must be borne in mind, and the possible results studied.

There is a certain element of humor in the fact that during the very time when the government is taking all sorts of measures to nullify the working of the

International Harvester

law of supply and demand and to eliminate competition, the International Harvester case should have been settled by an agreement on the part of the company to abandon its appeal to the Supreme Court from the decree of the United States District Court pronouncing the company an unlawful combination in restraint of trade and ordering its dissolution. There would seem to be a rather curious twist in the mental processes of the politician economist who has, for the last twenty years, been rather vainly attempting to keep competition alive by artificial means and who now is voting for laws aimed at the elimination of competition and voting to turn over the railroads of the country to a single federal administration in order that the wastes of competition may be eliminated. If the change in argument were less an absolute reversal of itself, it might be called inconsistency, but some way inconsistency hardly seems a comprehensive enough term to apply to it. However, the International Harvester case is of importance in itself in addition to being a reminder of a previous state of the politically economic mind. In making the announcement that it will carry out a dissolution plan, the Harvester company said that it was for business reasons that it had come to an agreement with the Department of Justice. The company will divest itself of the manufacture of certain machinery lines and have only one representative in any city and town, etc., and if, at the end of 18 months, these measures have not, in the opinion of the government, "proved adequate to restore competitive conditions" in agricultural implements, the government shall have the right to seek further relief. Is it not barely possible that the ideas of the Department of

Justice as to what constitutes a restoration of competitive conditions, have been so modified as to suggest to the Harvester company's officers that they could carry out an "acceptable" dissolution without plunging the agricultural implement industry into the throes of a cut-throat war of competition?

Whereas the taking over in some form or other of the railroads of the country by the Government seemed inevit-

Government Telephones and Telegraphs

able not only to the government but to most of the railroad executives, including those who feared the evils of government ownership most wholeheartedly, the taking over of the telegraph and telephone lines of the country was by no means so obviously necessary. The reasons most often given for government control and operation of railroads were that in this way only could wasteful competition be eliminated and the full use of all facilities be obtained. The real underlying reasons, however, why the government had to step in were the financial ones, which were so grave that had not the government taken charge and raised rates to an extent never even proposed by private owners, bankruptcy of railroad companies would have taken place on a great scale, but neither financial needs nor the elimination of competition could be urged as making government operation of the telephone and telegraph systems of the country inevitable. There was almost no waste due to competition in the telephone system and very little in the telegraph system. On the other hand, the contract which the government made with the telephone and telegraph companies was not a hard driven bargain such as that made with the railroads, but was a "mutually satisfactory agreement" between the postmaster general and President Theodore N. Vail of the American Telephone & Telegraph Company and President Newcomb Carlton of the Western Union. Interest charges, taxes and the existing rate of dividends is to be continued by the government, and apparently there is no disposition on the part of the postmaster general to radically change the existing order of things or to superimpose an organization of his own upon the present remarkably efficient organization of the American Telephone & Telegraph Company and Western Union Telegraph Company. The taking over, therefore, of these means of communications neither had the excuse which the taking over of the railroads had, nor had it the radical or unjust features which attached to the taking over of the railroads.

Wheat was one of the first of the commodities for which the government fixed a price. The price was intended to be high

Loans to Move the Crops

enough to encourage as large a production of wheat as possible. Since, however, land can be planted with grains other than wheat or with some other farm products, the fixing of prices for other commodities, such as sugar, for instance, and the making of a price for other commodities by open market competition, had its effect on the acreage planted to wheat. In general, the crop conditions this fall are excellent and the wheat crop will be one of the largest in the history of the country. Having protected the consuming public against an overcharge on the part of farmers or speculators for wheat, it was but right that the government should protect the farmer against competition for money from the government itself when it became necessary to finance the moving of the crops. Even in ordinary years, the withdrawal of money from the large banking centers to pay for harvesting and moving the crops is a considerable strain. Under conditions as they now are, with one Liberty Loan following

another so closely, it was essential that no chances should be taken in this all-important matter of getting in and selling this year's crops. On August 5 the managing director of the War Finance Corporation announced that the corporation would advance loans to banks to cover advances made in assisting the movement of crops. At first the rate of interest on these loans was fixed at six per cent, but later was reduced to five per cent. Loans were made up to 75 per cent of the face value of notes given in the prices of getting the crops moved and were limited to four months. The advances are made on written application through the federal reserve banks acting as the corporation's fiscal agents. Paternalism has advanced quite a long way when the government fixes the price at which the farmer may sell his wheat and arranges to finance for the local bankers, farmers and merchants the movement of this crop, and dictates to the consumer what part of his diet may be made up of wheat.

Before the signing of the armistice, the United States had loaned more than \$7,220,000,000 to our Allies. This does

Loans to Our Allies

not mean that we shipped gold to Europe, but rather that the government of the United States arranged for credits in this country approximately as follows: Great Britain, \$3,745,000,000; France, \$2,065,000,000; Italy, \$860,000,000; Russia, \$325,000,000; Belgium, \$171,000,000; Greece, \$15,800,000; Cuba, \$15,000,000; Serbia, \$12,000,000; Roumania, \$6,700,000, and Liberia, \$5,000,000. The goods purchased with these credits have been in large measure already manufactured, so that if the Fourth Liberty Loan had been sufficient to carry the needs of our government through the period of peace negotiations and demobilization, the transactions with the Allies would have been completely financed. This country could then have continued the loan to the Allies indefinitely, receiving, of course, interest on this huge sum which would have gone a considerable way toward paying the interest on the outstanding Liberty Loan bonds. What will probably happen, however, is that at least one, if not two, more Liberty Loans will be necessary to see the country back on a peace basis. An alternative to this would be a calling for repayment of the loans to the Allies. As a matter of fact, this country is in a much better position to raise additional loans than are the Allies. In the long run, it will be of great economic advantage to the United States if she can complete war financing within this country and remain a creditor nation to the Allies to the extent of more than \$7,000,000,000.

The National City Company of New York has compiled statistics and facts in regard to the internal war loans of the

Internal War Loans

belligerent countries. By this is meant the borrowings by the different governments from its own people. The compilation was made before the Fourth Liberty Loan campaign was undertaken, so that the figures for the United States do not include the nearly \$7,000,000,000 bonds which were sold in this campaign. One of the most interesting comparisons made possible by this compilation is that between the borrowings of Great Britain and Germany. Great Britain's totals, including four war loans, the sale of national war bonds, which sale is continuous, and of war savings certificates, was approximately \$13,500,000,000. Germany had had eight war loans, with a total of \$20,800,000,000. All of Germany's war loans were issued at a price below par, most of them at 98, although two, both of them 4½ per cent bonds, were issued at 95. The bonds in general pay 5 per cent interest,

although in a number of instances "treasury certificates" were offered at the same time bearing 4½ per cent interest. Great Britain's first war loan was a 3½ per cent bond issued at 95, the second was a 4½ per cent bond issued at 100, the third was a 4 per cent bond issued at 100, and the fourth, a 5 per cent bond, was issued at 95. The first national war bonds were 4 per cent, issued at 100, and the remainder were 5 per cent bonds issued at 100. France, with her coal mines in the hands of the enemy and some of the most important manufacturing centers as well as a great area of her agricultural lands in the hands of the Germans, raised nearly \$7,000,000,000 in three war loans, the first two being 5 per cent bonds, the first issued at 88 and the second at 88.75, and the third, a 4 per cent bond, issued at 68.60. While it is true that financing the war by means of bond issues is to some extent placing the burden of this financing on future generations, it must be remembered that both the principal and interest of these bonds are payable to future generations. Thus, during the next 20 to 30 years, taxes in this country, Great Britain or in France will possibly have to be sufficient to pay both interest and principal on the greater part of these internal loans, but the very people who are being taxed are the people who will receive the interest and the principal of the bonds that they hold, so that in a very real sense they will be taking out of one pocket through taxes what they put into the other pocket through interest and principal on their bonds.

Germany as a Competitor or as a Crippled Dependent

SOME YEARS AGO an executive officer of the Prussian State Railways, in conversation with a member of the *Railway Age* staff, commented on the marvelous system of train despatching on American railroads. What impressed him so greatly was the amount of freedom of action left to the individual despatcher and the amount of initiative and good judgment required to make a successful train despatcher. In Germany, he explained, train despatching was purely and simply a matter of following rules; a rule had been worked out for every conceivable situation, and it was the train despatcher's duty to find the rule that applied to any particular situation and then to follow that rule. He was asked what would happen if a situation should arise which was unique and which was covered by no rule. He replied, perfectly seriously, "Oh! we have a rule to cover that also. It is the duty of the despatcher to stop all trains and to apply to headquarters if a situation arises which is not covered by any of the ordinary rules." This is a characteristic of the German people. Highly organized as their industrial system is, it is peculiarly liable to complete stoppage if the unforeseen happens.

Much discussion has taken place both in this country and in England in regard to competition with Germany after the war. In nearly all of this discussion it has been assumed that the marvelous industrial machinery of the country would continue to function even after the Allies had dictated terms of peace which would include reparation and the giving up of Alsace and Lorraine. Now suddenly, however, the Allies are faced with the possibility that not only has the German war machine broken down, but that the country is like a cheese which a starving mouse has nibbled his way into and eaten everything of but the thinnest of rinds. It would now appear that Germany is bankrupt not only morally but materially and financially. There is the possibility that Germany's sixty million people will become a pauper burden which will have to be carried through the coming winter at least on the charity and humanity of the Allies.

A great number of enemy alien companies engaged in

mining, manufacturing and other commercial work in this country have been sold by the Alien Property Custodian and in addition there have been established quite a number of concerns engaged in the manufacture of goods such as dyes for which the world, or at least America, was almost wholly dependent on Germany prior to 1914. If Germany is to become a dependent on the world's charity instead of a competitor, this fact will have an important bearing on the immediate future of American industry and finance. As a competitor Germany might hope to enter almost at once into foreign trade, meeting the United States or England without being at too great a disadvantage. If Germany goes to pieces as she now appears to be on the verge of doing, effective competition will be almost out of the question.

In the long run, competition might be a barrier to the most effective development of American foreign trade. At present, however, the prospect of having to help feed Germany this winter is more appalling than would be the prospect of having to meet the old Germany in the competitive markets of the world. Revolution, which would amount to anarchy, might well mean just this. Chaos in Germany will prevent the immediate exacting of labor, materials or money sufficient to restore Belgium and the invaded portions of France; nor would it carry with it, immediately at least, any prospects of Germany as a market for American manufactures and raw materials. What raw materials and foodstuffs we would have to send to Germany would be sent as a charity for which the United States might never expect to be reimbursed. In a purely economic sense, this would be of enormous loss to the world. After all, what we want within this country as well as between this country and any other is a healthy rivalry which shall stimulate production. Unfortunately, the economic question is not the only one involved here. Morally, Germany is unfit to be recognized as a competitor. Justice may condemn Germany to suffer for years to come even without the Allies acting as interpreters and enforcers of this justice. If such be the case, Germany may be an economic burden on the rest of the world which will press heavily not only on the resources of the rest of Europe but of the United States as well.

The Labor Situation

WHEN THE DRAFT AGE was raised to include all men between 18 and 45, the prospects were that there would be a very severe labor shortage in this country. While the government has been regulating the price at which the products of labor could be sold, it did little to regulate the price of labor. As a matter of fact, wage scales were raised in nearly every industry which the government touched. One of the first things the Railroad Administration did was to drastically increase wages to railroad employees, and it was announced when the government took over the telephone and telegraph lines that wages of telegraphers would also be increased. Unskilled labor was the greatest beneficiary of changed conditions; but by wandering from one job to another unskilled labor, while keeping up the price of "a day's pay," did not as individuals benefit by any means to the full extent of the wage scale increase, and the country as a whole lost incalculably large sums through temporary idleness and through the necessity of breaking new men in continuously. One thing the government tried to do was to eliminate wasteful competition in the market for unskilled labor, and a United States central labor recruiting agency was established. In August, it was estimated that there was a shortage of 1,000,000 unskilled laborers, and a new list of non-essential work was promulgated which covered a very broad field; for instance, the manufacture of automobile accessories, teaming other than the delivery of products for war work, cleaners and dyers, and mercantile stores were all declared to be non-

essential industries. Those engaged in non-essential industries subject to the draft were required to either make application at the United States labor agency for work in essential industries or themselves to transfer their services to essential industries or to be subject to the draft.

The result was that non-essential industries had to take in utterly inefficient labor at an even higher scale than was formerly being paid to efficient labor, and essential industries had to face continuing demands for increased wages, and there was a large movement of women into both essential and non-essential industries.

Labor in this country and abroad is making demands both for increased wages and bettered working conditions and for power in the actual management of industry, the like of which has never been known before.

This labor situation has a very direct bearing on the investment value of securities of railroads, public utilities and industrial companies. Now, however, there comes in the new element of the return to industrial occupations of the men who have been called to the colors as soldiers. Will this squeeze out from industry the inefficient and, to a large extent, the women who are just beginning to be able to compete as unskilled laborers with the men in shop work, in street railway work and in many other industries? In so far as the United States is concerned, the men in the army will return to this country physically and mentally of a different class than when they volunteered or were drafted. The improvement in physical condition will be great, but the change of attitude of mind will be even greater.

A man who has gone through the discipline fitting him to serve in France can never look at his work in quite the same way as he did before this experience, whether he be a young farmer, a man who has worked at a trade, a helper in a country store, a miner or a day laborer. He will have acquired through the military training a new outlook on life, and a new standard by which to measure values.

On the other hand, the man whose horizon was limited by the farm and the village movies, by the factory and the corner saloon, will in innumerable cases rebel at the thought of returning to these circumscribed conditions. After the Civil War, there was the great undeveloped west into which the mustered out soldier could venture forth and from which he could carve his own fortune without the old bonds of New England industrial or agricultural conditions.

The returning soldier will have to fall back into the old order of industrial and agricultural conditions or he will have to compel changes in this old order. Herein lies both the danger and the opportunity of American industry. Industrial companies will have a better class of labor material to deal with, but labor will demand a greater share both in the profits and in the determination of conditions in the industry.

Those industrial concerns which still treat labor as a commodity to be bought at the cheapest possible price and to be treated accordingly are likely to find themselves saddled with the inefficient who are crowded out by the return of the soldiers. Those concerns which have already adopted a policy which presupposes that the laborer is a human being with ambitions and aspirations like other human beings and have held forth an incentive for their employees to work intelligently to increase profits should be able to have a choice of the man whose outlook has been so greatly broadened by their experiences with the colors. An industrial company which can so arrange its business as to have the work that can be done more or less mechanically, done by machines, and the work which requires greater intelligence and individual skill, done by men who have been physically and mentally trained in the army, and pay these latter wages which will be commensurate with the new ideals of living, and will share profits or otherwise stimulate and reward ambition and good work will be the ones to profit greatly by the change in labor conditions.

New Offerings of Securities

NOTWITHSTANDING the fact that new issues of corporation securities had to be "not incompatible with the national interest" and had to be passed upon by the capital issues committee of the United States government there was a considerable volume of securities offered to the public in July, August, and the first week of September. Of the principal offerings during this period ten were public utilities issues, seven were bonds or notes of manufacturing companies, five were municipal issues, one was a short term note issue of an eastern trunk line railroad, and the others were securities of shipbuilding, fisheries, etc., companies.

The yield on investment in these securities ranges all the way from 4.35 per cent on the State of Maryland income tax exempt $4\frac{1}{2}$ per cent bonds, maturing serially from 1921 to 1933, to 8 per cent on the Hydraulic Pressed Steel Company first mortgage and collateral trust 3-year 7 per cent gold notes due 1921. In general the municipal issues were offered at prices which would yield the investor from $4\frac{1}{2}$ to $4\frac{3}{4}$ per cent interest; the public utilities at prices to yield the investor from $7\frac{1}{2}$ to $7\frac{3}{4}$ per cent interest and the manufacturing companies from $7\frac{1}{2}$ per cent to 8 per cent interest.

The municipal issues are exempt from the federal income tax and supertaxes and are generally tax free in the state of issue. The following are typical of the municipal bonds offered for sale during the last three months: State of Maryland $4\frac{1}{2}$ per cent serial bonds dated August 15, 1918, and maturing serially from 1921 to 1933 inclusive of total offer-

ing 2,500,000. These bonds were offered by the Mercantile Trust & Deposit Company of Baltimore and the First National Bank of New York at the prices for the different maturities which gave the investor an interest yield of 4.35 per cent. State of Louisiana Port Commission serial 5 per cent gold bonds dated July 1, 1918, and due serially from July 1, 1929, to 1958, total issue \$2,500,000. The bonds are tax exempt in Louisiana when registered and of course are exempt from federal income taxes. They were offered to the public by Halsey, Stuart & Co. of Chicago and William R. Compton Company, New York, at prices ranging from 101.26 for bonds maturing in 1929 to 102.64 for bonds maturing in 1958, the interest yield to the investor being 4.85 per cent. The City and County of Denver (Colorado) $4\frac{1}{2}$ per cent water bonds dated November 1, 1918, due November 1, 1948, total issue \$10,800,000. The bonds were offered to the public by Harris, Forbes & Co. and E. H. Rollins & Sons of New York and by the International Trust Company and Boettcher, Porter & Co. of Denver at $95\frac{1}{4}$, yielding the investor 4.80 per cent interest on his money. The bonds were issued to purchase the plant and distributing system of the Denver Union Water Company, the price agreed upon being \$13,970,000. The net earnings of the Water Company for the year ended November 1, 1917, were \$1,004,554. The bonds are general obligation of city and county of Denver. The Lake Worth Drainage District of Palm Beach County, Florida, 6 per cent bonds maturing serially from 1922 to 1944 are offered at prices yielding a much higher interest return than the other principal munici-

Bond	Coupon	Date	Offering Price	Yield	Bankers	Amount
Amalgamated Sugar Company First Mtg. Serial Conv.	7	Aug. 1, 18-19 to 23	$99\frac{1}{4}$ to $96\frac{3}{4}$	7.50 to 8	Continental and Commercial Trust and Savings Bank (Chicago)....	\$3,750,000
American Cotton Oil Company.....	7	Sept. 3, 18-19	$99\frac{1}{4}$	$7\frac{3}{4}$	First National Bank of New York..	5,000,000
Bethlehem Steel Corporation Secured Serial	7	July 15, 18. July 15, 19-22 (\$7,500,000 annually)	$99\frac{1}{4}$ to 97	$7\frac{1}{2}$, $7\frac{3}{4}$, $7\frac{3}{4}$	Bankers Trust Co. Guaranty Trust Co.	50,000,000
China Mail Steamship Corporation First Mtg. Short Term.....	7	July 1, 18-19 to 21	99.53 to 98.68	$7\frac{1}{2}$	Blyth, Witter & Co. (Los Angeles)..	1,750,000
Cities Service Company Series B Conv. Debentures	7	Jan. 1, 18-66	$102\frac{1}{4}$	....	Henry L. Doherty & Co.....	6,000,000
City and County of Denver, Colo., Water	$4\frac{1}{2}$	Nov. 1, 18-48	$95\frac{1}{4}$	4.80	Harris, Forbes & Co. E. H. Rollins & Sons	10,800,000
City of Memphis, Tenn. River Terminal. Duquesne Light Company (Pittsburgh) Secured	5	April 1, 18-23 to 48	100.60 to 102.40	4.85	A. B. Leach & Co., Inc.....	500,000
Edison Electric Illuminating Co. (Boston) Farm Loan Bonds.....	7	July 1, 18-21	96	$7\frac{1}{2}$	Harris, Forbes & Co. First National Bank	10,000,000
Hydraulic Power Company of Niagara Falls Ref. and Imp. Mtg.....	5	Aug. 1, 18-22	$99\frac{1}{4}$	7.10	Lee, Higginson & Co.....	3,000,000
Hydraulic Pressed Steel Company First Mtg. and Coll. Trust.....	5	May 1, 18-38 (Optional after May 1, 23)	$101\frac{1}{2}$	4.65, 5	Bonbright & Company.....	500,000
Interborough Rapid Transit Company Secured Conv.	7	-51	.....	....	Spencer Trask & Co.....	1,500,000
Jacob Dold Packing Company Serial....	7	July 1, 18-21	$97\frac{3}{4}$	8	A. B. Leach & Co., Inc.....	3,500,000
Kansas City Railways Company Coll., "Series A"	7	Sept. 1, 18-21	$98\frac{1}{4}$	$7\frac{1}{2}$	J. P. Morgan & Co.....	33,400,000
Lake Worth Drainage District of Palm Beach County, Florida, Serial.....	7	Nov. 15, 18-19 to 23	100 to 99	$7\frac{1}{2}$, $7\frac{3}{4}$, $7\frac{3}{4}$	National City Company.....	3,000,000
Lehigh Valley Railroad Company Coll. Trust	7	May 15, 18-21	98	$7\frac{1}{2}$	Halsey, Stuart & Co., Chicago.....	7,750,000
Mark Manufacturing Company Secured, Assumed by the Steel and Tube Company of America	7	Jan. 1, 17-22 to 44	100	6	William R. Compton Company.....	1,028,000
Mengel Box Company Serial Debentures.	6	Aug. 31, 18-28	$97\frac{3}{4}$	6.35	Drexel & Co. First National Bank.	15,000,000
Moline Plow Company Serial	6	June 1, 17-20	$97\frac{3}{4}$	$7\frac{1}{2}$	Cont. and Comm. Trust and Savings Bank	6,000,000
Northern States Power Company Sinking Fund Conv.	7	Nov. 1, 18-20 to 23 (\$1,000,000 annually)	$99\frac{1}{4}$ to $98\frac{3}{4}$	7.25 to 7.40	Halsey, Stuart & Co.....	4,000,000
Pennsylvania Electric Company Secured. Potomac Electric Power Company Gen. Mtg.	7	Sept. 1, 18 (\$1,000,000 annually) 19, to 24	$99\frac{1}{4}$ to $96\frac{1}{4}$	$7\frac{1}{2}$, $7\frac{3}{4}$	National City Company. Guaranty Trust Co.....	6,000,000
Standard Gas & Electric Company Coll. Trust	7	Aug. 15, 18-23	96	8	Guaranty Trust Co.....	2,000,000
State of Louisiana Port Commission Serial Canal	7	July 1, 18-23	$97\frac{3}{4}$	....	Montgomery & Co.....	1,500,000
State of Maryland Serial.....	6	July 1, 18-23	93	7.75	National City Co. Harris, Forbes & Co.	2,100,000
State of Oregon Highway.....	7	Sept. 3, 18-21	$97\frac{1}{2}$	8	Bonbright & Company.....	750,000
Steel & Tube Company of America Secured Conv.	5	July 1, 18-29 to 58	101.26 to 102.64	4.85	Halsey, Stuart & Co. William R. Compton Co.	2,500,000
Stewart Manufacturing Company First Mtg. Serial	4	Aug. 15, 18-21 to 33	.....	4.35	Mercantile Trust & Deposit Co. (Baltimore)	2,500,000
West Penn Power Company First Mtg. Series "C"	4	July 1, 18-Oct. 1, 23-43	92.58 to 97.69	4.50	A. B. Leach & Co., Inc. E. H. Rollins & Sons.....	690,000
Carbo-Hydrogen Co. of America Cum. Pref. Stock	7	July 1, 18-21	$97\frac{3}{4}$	7.80	Wm. A. Read & Co.....	5,000,000
		July 1, 18-20 to 24	$98\frac{1}{4}$ — $95\frac{1}{4}$	7	Central Trust Company of Illinois..	500,000
		March 1, 16-June 1, 1958	98	6%	Halsey, Stuart & Co. A. B. Leach & Co.	2,223,000
			$97\frac{1}{4}$ with 25% com. bonus	....	Douglas Fenwick & Co. Charles S. Kidder & Co.....	750,000

pal issues sold during this period. The bankers—Wm. R. Compton & Co., New York, and the Mercantile Trust Company and Kauffman-Smith-Emert of St. Louis—offered the bonds of all maturities at 100, yielding the investor 6 per cent. The total amount of the offering was \$1,028,000 and the bonds are secured by a tax lien on 130,000 acres of land "averaging in value at least \$35 per acre."

The characteristic of the municipal issues is their exemption from federal income taxes. This makes them an investment for individuals with incomes subject to super taxes which makes the yields at as high or higher net rate of interest—no taxes being deducted—as manufacturing company or other companies bonds on which the gross interest rate is much higher but from which the federal income tax has to be deducted. Although therefore they are a thoroughly safe investment in general—the high yield of the Florida Drainage District bonds indicates less absolute security of principal and interest—they are not as attractive for the salaried man with an income not subject to the higher super taxes as some of the industrials and public utilities.

Far and away the largest issue of a manufacturing company's bonds was that of the Bethlehem Steel Corporation 7 per cent secured serial gold notes. The total authorized issue was \$50,000,000 issued in five series A, B, C, D and E. The first four series are for \$7,500,000 each due A in one year, B in two, C in three, and D in four years. Series E is for \$20,000,000 due in 1923. The one-year notes were offered at 99½ yielding 7½ per cent interest, the two-year at 98¾ yielding 7⅝ per cent interest, the three-year at 98¾ yielding 7⅝ per cent interest, the four-year at 97½ yielding 7¾ per cent interest and the five-year at 97 yielding 7¾ per cent interest. The company pays the federal income tax up to and including the normal 2 per cent without deduction from the 7 per cent interest, but the holder of these notes must himself pay such super income taxes as he is liable for. The bonds are to be secured by the deposit of \$70,000,000 consolidated mortgage 30-year sinking fund 6 per cent series A bonds.

The War Finance Corporation took \$20,000,000 of these notes in order to permit the company to complete the production of government orders for "commercial steel products essential to the government's war programme." Holders of these notes have the privilege of converting them into consolidated mortgage 6 per cent bonds due August 1, 1948, at a price equivalent to a 6½ per cent income basis at the time of such conversion. Thus if an investor buys a four-year note at the offering price which was 97½ he would get an interest return on this note of 7¾ per cent and at any time before July 15, 1922, could exchange it for a bond on a basis of exchange which would give him a long term bond due in 1948 and yielding 6½ per cent income annually for that period.

The extent and rapidity of the growth in business of the Bethlehem Steel Corporation is so well known as to need comment only in the way of an analysis of the methods used to provide additional plant facilities and working capital. In 1913 the corporation booked orders amounting to \$39,936,000 and had at the end of the calendar year \$24,866,000 uncompleted orders. The manufacturing profits for that year were \$8,531,000. The tremendous jump in business came in the calendar year 1915. The amount of orders booked is not reported, but at the end of the year there was \$175,433,000 uncompleted orders and the manufacturing profits for that year were \$23,783,000. In the calendar year 1917 the orders booked are not reported, but at the end of the year there was \$453,809,000 uncompleted orders. Manufacturing profits amounted to \$51,003,000 about \$9,000,000 less than the profits in 1916.

Since the formation of the corporation in 1905 up to December 31, 1917, only \$17,742,000 had been paid out in cash as dividends out of a total of \$106,256,000 available for dividends after charging off ordinary and extraordinary

repairs and making provision for depreciation and depletion.

In 1917 the corporation readjusted its stock capitalization, issuing \$44,586,000 new class B common stock and \$29,724,000 new 8 per cent cumulative preferred stock. Two-thirds of the new common was issued as a stock dividend and \$15,000,000 of it sold at par for cash. The new preferred was sold for cash at par, so that during 1917 the company received approximately \$45,000,000 new money from the sale of stock and also sold during that year approximately \$50,000,000 two-year notes of the Bethlehem Steel Company—a subsidiary of the corporation. These notes were secured by \$25,000,000 treasury bonds of the company and \$37,600,000 short term notes of the British government maturing prior to February 15, 1919. In his letter to the bankers underwriting the new issue of notes President E. D. Grace of the Bethlehem Steel Corporation says that through the sale of these new notes and the liquidation of the \$37,600,000 British treasury bills due February 1, 1919, the corporation will be able to pay off the Bethlehem Steel Company notes due February 15, 1919, and complete its construction programme and have adequate working capital. There are now approximately \$650,000,000 orders on hand, and President Grace says that of this less than 12½ per cent are for guns, armor plate, projectiles, and similar war material.

The policy toward cash dividends has been thoroughly conservative and the raising of nearly half of the additional \$100,000,000 required in 1917-18 through the sale of stock also indicate a sound financial policy. The Bethlehem Steel Corporation and its subsidiaries have outstanding a comparatively small amount of funded debt. The steel company has \$12,760,000 first lien bonds due in 1942 and \$23,538,000 purchase money sinking fund 5 per cent bonds due in 1936. Other subsidiaries have outstanding comparatively small issues of bonds.

An investor considering the purchase of the new Bethlehem Steel Corporation notes should ask himself first whether he will probably want to convert his notes into a long term bond yielding 6½ per cent interest on his investment and if not whether the corporation will be likely to need to refund these \$50,000,000 notes as they fall due during the next five years.

If we assume that the corporation will have to sell new securities the price at which these can be sold will depend in good part on the continuance of the booking of orders—if not on as huge a scale as at present, at least on a scale which will keep the plant reasonably busy. There seems to be every prospect of shipbuilding continuing for two or three years at least on a large scale and the Bethlehem Corporation has facilities for building one million dead weight of shipping per year, which is about one-third of the present steel shipbuilding capacity of the United States.

These notes are rather an investment for a business man who is able to form a judgment of his own as to possible after war conditions in the steel trade than an investment for an individual not in close touch with general business conditions and entirely dependent on income from investments.

Although the war has brought immensely increased business to the meat packers, the security of these companies are in "war securities" in the generally accepted meaning of that term. The war, however, has necessitated a large increase in inventories and a consequent need of larger working capital. The Jacob Dold Packing Company sold to the National City Company recently \$3,000,000 7 per cent serial gold notes due \$500,000 annually, November 15, 1919, to November 15, 1922, inclusive, and \$1,000,000 due November 15, 1923. These notes were offered to the public by the bankers at par for the one-year notes, 99¾ for the two-year notes, 99¼ for the three-year notes, 99⅛ for the four-year notes and 99 for the five-year notes. This makes the interest yield 7 per cent on the one-year notes, 7⅛ per cent on the two-year notes, and 7¼ per cent on the

remainder of the notes. This company is one of the eight largest packing companies in the United States. In 1916, it handled 952,000 head of live stock, and in 1917, 793,000 head of live stock. The sales in 1916 amounted to \$29,593,000, and in 1917 to \$40,000,000. The earnings available for interest and taxes have averaged \$1,100,000 per year for the last 5½ years, while the interest charges on this issue of notes calls for \$210,000 annually, so that if the company's earnings averaged as high in the next five years as in the preceding five, it can pay both the interest and the principal of these notes as it falls due from earnings.

The company has no other debt outstanding in the hands of the public and the proceeds of these notes are to be used to pay off bank loans. On January 1, 1917, the company had \$2,725,000 bills payable which might be considered the normal amount, the company having averaged between two and three million dollars bills payable from 1911 to 1917. On January 1, 1918, bills payable amounted to \$6,940,000. There was \$1,040,000 cash on hand and \$2,373,000 accounts receivable. The merchandise and supplies on hand totaled \$6,212,000, comparing with \$3,821,000, January 1, 1917, and with merchandise and supplies varying from two to three million dollars in 1911 to 1917.

The Steel & Tube Company of America sold \$5,000,000 three-year 7 per cent secured convertible gold notes and these notes were offered to the public by Wm. A. Read & Co. at 97⅞, yielding the investor 7.80 per cent interest. The notes are secured by the deposit of \$5,000,000 7 per cent series A general mortgage sinking fund bonds due July 1, 1943, and are convertible at par into these bonds.

The Steel & Tube Company manufactures steel tubes and is a producer of pig iron, having plants at South Chicago, Indiana Harbor, Evanston, Ill., and Zanesville, Ohio. The company is not listed in Poors Manual of Industrials so that the investor is dependent upon such information as is given out by the bankers making the offer and such an investment must of necessity depend largely on faith in the business judgment of the bankers.

The Hydraulic Pressed Steel Company sold \$3,500,000 first mortgage collateral trust 7 per cent gold notes due 1921, and these notes were offered to the public by A. B. Leach & Co. at 97⅞, yielding the investor 8 per cent interest. This company's business consists of the manufacture of steel ingots, heavy pressed steel, steel roofing, automobile frames, etc. Of the entire output at present President J. H. Foster says that 70 per cent represents standard products which are being used for government purposes; the remaining 30 per cent is mainly shell forgings. In 1915 the manufacturing profits were \$719,000, 1916 \$1,210,000 and in 1917 \$1,702,000.

The proceeds of the sales of these notes will be used to pay off the \$1,800,000 7 per cent notes due October 15, 1918, and for plant extension and additional working capital. The company has outstanding \$947,000 7 per cent cumulative preferred stock on which it has paid dividends regularly and \$5,000,000 common stock on which it has paid 8 per cent annual dividends since 1908.

Exclusive of good will and patents total assets of the company on May 31, 1918, amounted to \$12,055,000 which included \$7,731,000 current assets with \$3,313,000 current liabilities. The company is obliged to set aside 25 per cent of its surplus after interest charges, taxes and preferred dividends, of which two-fifths may be invested in permanent improvements and the remaining three-fifths must be used to retire notes.

As will be seen, the company is in a strong position as regards working capital and is conservatively capitalized as regards earning power shown in each year since 1908. On the other hand the profits now being shown are from government work and the manufacture of munitions. With

the declaration of peace will come presumably a change in the character of the business which the company will do and with new conditions the earning power shown in 1916-17 may be an untrustworthy criterion of earning power in times of peace. These notes therefore are an investment which must be made with the knowledge that the investor is to some extent relying on his own judgment of conditions in the steel trade after the war or in the judgment of the bankers making the offering.

The Moline Plow Company is a long established business, having manufacturing plants at Moline, Ill., Stoughton, Wis., Freeport, Ill., and at various other places. The products of the company are plows, farm wagons, seeding machines, binders and tractors, and at one of the Freeport plants the company manufactures automobiles and commercial bodies. The company recently sold to a banking syndicate headed by the National City Company and the Guaranty Trust Company \$6,000,000 7 per cent serial gold notes due \$1,000,000 annually beginning September 1, 1919, to September 1, 1924. The bankers offered the bonds to the public at 99½ for notes due in one year, 98¾ due in two years, etc., to 96½ for notes due in six years. At these prices the investor receives 7½ per cent on one year notes, 7⅝ on two and three-year notes and 7¾ on four, five, and six-year notes. In the fiscal year 1915 the company had gross sales of \$10,212,000 with \$669,000 net income available for interest and dividends. Both 1914 and 1915 were bad years for the company, and the regular 7 per cent cumulative dividend on the first preferred and 1½ per cent paid on the common and 1½ per cent paid on the second preferred left a deficit for the year. In 1916 and 1917 gross sales were not reported but net income from operation amounted in the fiscal year ended July 31, 1916, to \$1,101,000 and in the 1917 fiscal year to \$1,761,000. In 1917 the regular 7 per cent dividends were paid on the outstanding \$7,500,000 first cumulative preferred stock, 6 per cent on the \$1,500,000 non-cumulative 6 per cent preferred and 2 per cent on the \$10,000,000 common stock, leaving a surplus for the year of \$752,000. A vice-president, F. G. Allen, says that when the present financing is complete the net current assets will be more than three times the amount of the note issue. As of June 30, 1917, the company had \$6,680,000 bills payable whereas in the previous four years bills payable had averaged in the neighborhood of \$2,000,000. Inventories in 1917 amounted to \$11,297,000, comparing with \$8,023,000 in 1916 and \$5,982,000 in 1915.

These notes of the Moline Plow Company would appear to be good "peace investments." Agricultural implements are likely to have a wide market and a comparatively high price for some years after peace is declared and the Moline Plow Company should be in a position to manufacture tractors if the trend of development in more scientific agriculture warrants it on a large scale. The longer term notes are especially attractive at the price at which they are offered and while, of course, such notes should form only a part of any one's investment who is entirely dependent on income the high yield combined with the nature of the business done by the company makes this a good investment for a part of such funds or for a business man not dependent on income from investments.

The offering of \$33,400,000 Interborough Rapid Transit 7 per cent notes by J. P. Morgan & Co., and associates, was the largest offering of public utility securities during the period under review. These are three-year convertible notes due September, 1921, and the offering price was 98½ so that the interest yield to the investor was 7½ per cent. The notes are secured by the deposit of \$52,187,000 Interborough Rapid Transit, first and refunding mortgage 5 per cent bonds due 1966, and the notes are convertible into these bonds at 87½ at which price the bonds would yield over 5¾ per cent.

The proceeds of these bonds is to be used to complete the

Interborough Rapid Transit Company's capital expenditure on the new subways in New York, and will cover the entire amount with the exception of \$6,000,000 expenditures which are to be deferred until after the war. The Interborough Rapid Transit's relations with New York City in regard to street railway, subway, and elevated lines operations are somewhat complicated, but in brief the city raised the capital to build the old subways and leased them to the Interborough for 50 years with the option of renewal for 25 years; the Manhattan elevated is leased to the Interborough by a private company and the Interborough and the city each raised part of the capital to pay for the new subways and additions and extensions to the old subway and elevated. Provision is made whereby the profits over and above rentals and interest charges is to be shared by the city and the Interborough, and provision is also made that deficits and rentals or interest charges shall become cumulative and payable out of the earnings of future years. The city still has \$40,000,000 to provide to complete its part of the capital expenditures on the new subways.

President Theodore P. Shonts, in his letter to the bankers who underwrote the bonds, says that the company is entitled to take out of the revenues of the Interborough \$17,208,000 which includes corporate income other than Rapid Transit earnings and that the amount required for interest charges on all bonds and notes outstanding and for sinking funds is \$11,973,000.

The gross earnings of the Interborough in 1916 were \$35,892,000; in 1917, \$39,866,000, and in 1918, \$40,498,000. Expenses have increased rapidly, especially in 1918, so that there was \$11,757,000 available for interest charges in 1916; \$12,458,000 in 1917, and \$9,429,000 in 1918. The company is asking for an increased rate of fare, but the opposition which it is meeting is very strong.

There is a danger in the Interborough Rapid Transit situation as there is in other public utility companies' situations, that hostility, stupidity or cupidity on the part of local authorities will refuse to let the company readjust its rates in accordance with the increased cost of doing business. To offset this there are two factors peculiar to the Interborough situation. The fact that the city itself is a partner in the enterprise makes it most unlikely that any policy will be pursued which would permanently impair the company's credit. Furthermore, New York City has shown a tendency to grow even more rapidly than the extension of Rapid Transit facilities, and the period of transition which is now being

experienced because of the opening of the new subways is not likely to be a long one. New Yorkers seem to be willing to tolerate any degree of crowding on the Rapid Transit lines and as soon as the new parts of the subway are worked at or near their capacity there should be ample profits to pay both the city rentals and interest on the company's funded debt even without an increase in rate of fare, providing that the costs of operation are not greatly increased over what they are now. And the public will continue to submit to being crowded in non rush hours as well as in rush hours.

The fact that the notes are convertible into first mortgage bonds, due 1966, makes them an investment which, while yielding a high rate of interest at present, permits of taking advantage of changed investment conditions three years from now by converting notes into bonds—if the change should be in the nature of higher prices and lower interest yields—and of taking the payment in cash for the principal of the notes if the change should be in the nature of still lower prices for long term 5 per cent bonds.

The only offering of steam railroad bonds was the \$15,000,000 Lehigh Valley 6 per cent, 10-year collateral trust bonds which were offered by Drexel & Co., of Philadelphia, and the First National Bank of New York. The offering price was 97½ so that the interest yield to the investor was 6.35 per cent. The bonds are secured by the deposit of \$4,000,000 Lehigh-Buffalo Terminal first mortgage, 4½ per cent bonds, \$2,600,000 Consolidated Real Estate Company 4 per cent mortgage bonds, and \$17,400,000 Lehigh Valley general consolidated mortgage bonds due 2003, bearing interest at 5, 4½ and 4 per cent.

The Lehigh Valley is now, of course, under the United States Railroad Administration, and the government's rental is more than sufficient to pay interest charges and to continue the regular 10 per cent dividend which the company has paid for a number of years on its \$60,608,000 outstanding stock. The Lehigh Valley under progressive management has great potential earning power. If the roads are restored to their owners 21 months after peace, the Lehigh Valley will be in a strong position to compete successfully with the Erie and the New York Central on through business, and hold up its end in competition with the Delaware, Lackawanna & Western and the Central of New Jersey on through business and coal business. If the roads were to be taken over by the government, holders of these notes could hardly fail to receive full interest and payment of principal when the notes fall due in 1928.



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Americans Arriving in Italy

The American Locomotive Company

THE EQUITY which the stock of the American Locomotive Company has in the earnings of the fiscal year ended June 30, 1918, are very considerably larger than would appear from a casual reading of the company's income account. In the 1918 fiscal year the company earned \$80,588,000, comparing with \$82,214,000 in the previous fiscal year. Manufacturing maintenance and other expenses amounted to \$70,359,000 as compared with \$72,615,000 in 1917. Thus the manufacturing profit was \$630,000 greater in 1918 than in 1917, and totaled \$10,230,000, but included in manufacturing expense is \$981,000, which was the figure at which drawings and patterns were carried. The value of these was written down to \$1, and a corresponding charge made to manufacturing expense. Of the net profits in 1918 only \$894,000 was derived from manufacture of munitions, and the company is now engaged exclusively in the manufacture of locomotives and locomotive parts. Munitions were made at the Montreal and at the Richmond plants, but by October these plants had been almost completely restored for locomotive manufacturing. The cost of these changes to the Richmond and Montreal plants was charged against a previously created reserve from the earnings of years prior to 1918.

After paying interest charges the company had \$9,930,000 in 1918 available for taxes and dividends and \$9,407,000 in 1917. There has been set aside \$4,019,000 for United States and Canadian taxes out of 1918 earnings. This compares with \$2,205,000, the taxes in 1917. It would appear that this 1918 provision is fully sufficient to more than cover any taxes which are at all likely to be imposed. The company pays 7 per cent on its preferred stock and 5 per cent on the common, and had in 1918 a surplus of \$2,911,000 after dividend payments. The surplus in 1917 was \$3,952,000, from which there was \$2,000,000 reserve for additions and betterments, leaving a credit to profit and loss of \$1,952,000. Only \$1,000,000 was set aside for additions and betterments in 1918, leaving a credit to profit and loss of nearly the same as in 1917. Since the Montreal and Richmond works have been restored and the cost already

charged to reserves, it would seem that setting aside \$1,000,000 this year as against \$2,000,000 last year before such changes were made, is a generous provision for future needs.

The company has adopted a new policy in regard to parts and specialties. It has bought a steel castings plant at Chester, Pa., and has installed a brass foundry. The company also bought the plant of the Kline Motor Car Corporation at Richmond, and is to manufacture at this plant locomotive specialties, including such things as a power reverse gear, etc.

The high cost of materials and the difficulties of getting deliveries is placing a heavy burden on the working capital of a great variety of manufacturing companies, and the American Locomotive Company is no exception to this rule. The company has contracts from the United States Railroad Administration for 800 of the Administration's standard locomotives and these locomotives are now in the process of being built. Materials and supplies on hand are carried at \$11,637,000, and contract work in course of construction at \$13,649,000. This compares with \$7,306,000 materials and supplies, and \$11,170,000 contract work in course of construction in 1917, and with a total of \$11,000,000 for these two accounts in years of largest business prior to the war. At the end of the 1918 fiscal year the company had \$16,591,000 accounts and bills receivable and \$2,709,000 cash on hand. This compares with \$12,025,000 accounts and bills receivable and \$4,711,000 cash on hand at the beginning of the fiscal year. The accounts payable total \$6,459,000 at the end of the 1918 year, comparing with \$4,424,000 at the beginning of the year.

Apparently the cost of restoring the munition plants to fit them for locomotive building again was about \$1,100,000, this amount having been charged to the reserve for restoration of munition plants and other contingencies. At the beginning of the year there was also a reserve of \$3,723,000, and at the end of the year a reserve of \$1,591,000, so that since \$1,000,000 was added to this account from the year's income, there was apparently charged to it about \$3,131,000 for expenditures made in 1918. These additions and betterments include the cost of buying the steel castings plant.



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Chinese Laborers in France Filling Trucks with Earth Removed to Make a Cutting

Yukon Gold

THE CREDIT STRUCTURE of this country is founded on the amount of gold held in the vaults of the banks and of the United States treasury. There is comparatively little gold in circulation, but each yellow-backed treasury note represents actual metal in the United States treasury vaults, each federal reserve bank note represents a credit based on a certain percentage of the metal in the vaults of the banks and each bank credit (power to draw checks) likewise is based on a certain percentage of the actual metal being deposited in bankers' vaults. If, therefore, we increase the supply of gold in the hands of bankers in this country, we much more than proportionately increase the amount of money (credit) which the country as a whole has to pay to its workers for the production of raw materials and finished products and likewise we increase the volume of credit which we can extend to our allies for the purchase of food supplies and war supplies. On the other hand, no increase in the amount of gold can of itself increase the productive capacity of the workers of this country or add to the natural resources and raw materials which are to be worked up into finished products such as food and war supplies, clothing, etc.

Thus, viewing each of the countries of the world as a separate individual, it is of the utmost importance to any one individual country to have as large a share of the gold supply of the world in the vaults of that country as is possible. Carrying this a step further, it is of the greatest importance for any one country to produce as much gold as possible. To produce gold, we must expend labor, power generated by fuel or water power, and wear and tear on machinery. In other words, in the production of a given amount of gold, a certain amount of other raw materials, considering labor as a raw material, are consumed. About the same amount of these other materials is required now to produce an ounce of gold as was required prior to 1914, but by no means as much of these materials can be secured in the open market with the ounce of gold now as could be secured in 1914. Dollars and cents are based on a gold standard, meaning a certain weight of gold to the dollar. It takes more dollars and cents to secure the same labor and machinery now than it did in 1914.

A large number of gold mines which were profitable in

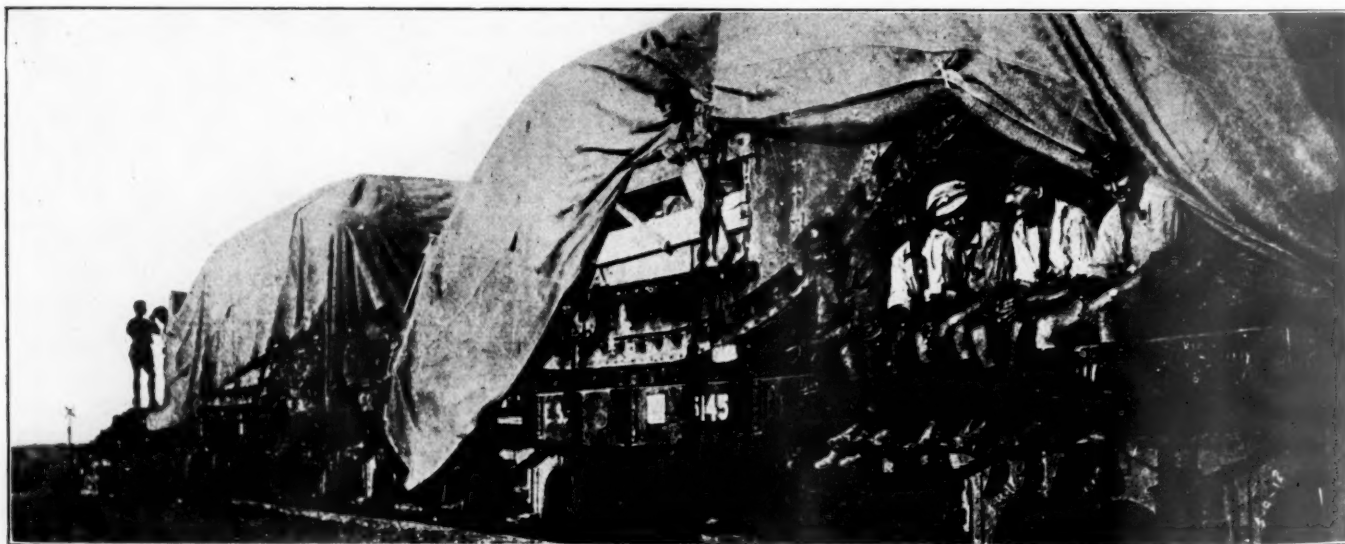
1914 are now being run at very much lower margins of profit. It is even claimed that gold mining on a large scale will be abandoned while present economic conditions continue.

The experience of the Yukon Gold Company is a good illustration of what has taken place. This company owns placer mines in Dawson, Alaska, in California and in Idaho, and in 1916 bought a lode mine at Jarbidge, Nevada. In 1916, the gold produced from these mines totaled \$4,384,000, and the working cost of producing this gold was \$2,291,000, leaving \$2,092,000 as profit from which to pay interest on investment in machinery, etc. In 1917, the production of gold amounted to \$3,911,000, and the working costs were \$2,227,000.

A gold mine is a wasting asset. Therefore, the owner must expect to receive each year not only the interest on the money invested, but also a part of his capital, or else the company must continue to acquire year by year new mines to represent and take the place of the depletion of the mines previously acquired. In 1916, there was \$1,050,000 distributed in dividends by the Yukon Gold Company, and the company spent \$1,893,000 for acquiring and developing new properties. In 1915, it had become obvious that to continue acquiring new mines it would be necessary to borrow additional capital and notes totaling \$5,000,000, due \$625,000 annually, were disposed of. In 1916, the first of these notes was due, but was extended for eight years. By 1917, it had become plain that under present conditions the company could not continue to pay dividends and pay off \$625,000 a year of notes. Even if no dividends had been paid and the regular charges had been made for depletion (\$807,000) and for depreciation (\$633,000), there would have been a deficit of \$67,000.

A better understanding of the distinction between money, credit, and value, between money wages and actual wages, and between inflation and expansion, can be had by a study of the effect of present conditions on the gold mining industry of the United States, especially if we carefully consider the various remedies which are being proposed to stimulate the production of gold.

In the first place, it is necessary to keep very clearly in mind the meaning of such terms as the "cost of money" and the "cost of gold production." By cost of money is generally meant the interest rate which a borrower is willing



British Official Photo, from Central News Photo Service

Tanks Loaded on Flat Cars En Route to the Allies in Palestine

to pay for the use over a specified time of a certain amount of money, and by money is really meant credit. The cost of the production of gold, on the other hand, is, as previously pointed out, the dollars and cents way of stating the wastage of materials other than gold in the recovery from the earth of a certain weight of gold.

It has been proposed to decrease the weight of gold required to make a dollar. Were this done, however, the entire machinery of foreign trade and of payment of interest and principal on bonds would be thrown out of gear. At best it could help the miner of gold only for a very short period of time when the dollars' and cents' cost of the wastage of materials would readjust itself to the new weight of gold in the dollar, and the miner would be as bad off as before. In the meantime, unless all other countries having a gold standard were immediately to readjust their weights for their gold coins, the dollar in foreign trade would depreciate in value by just the proportionate decrease in gold contained. Another remedy which has been suggested is for the government to pay a bounty to gold miners. This is artificial stimulation of a particular industry at the expense of all other industries. Governments have paid bounties to particular industries to develop them and have been successful in so doing. The shipbuilding industries of foreign countries is a case in point, although ship subsidies in this country have been bitterly resisted; but there is a difference between a subsidy to develop a particular industry which it may be argued will in time take care of itself and artificially stimulate a particular industry which will have to continue indefinitely to subsist in part on this bounty.

It has been suggested that the taxes on the gold mining industry be reduced or eliminated, and curiously enough, some of the same economists who see the futility or fallacy in granting a government bounty to the gold miner advocate an exemption from taxes. There is no fundamental difference between a bounty and the remission of taxes; each is an artificial stimulation of one industry at the expense of all other industries.

After all, is the gold mining industry so vital to national needs? Conceive for a moment that all gold mining in the United States were stopped, but that gold mining in British and French possessions continued at the present rate: the labor and materials heretofore consumed in this country upon the production of gold would be utilized in the production of some other products—lumber, coal, cattle, or something else. If we could so simplify the problem as to see this additional production of useful materials as the exact amount which this country would have as a surplus exportable to other countries, it would be obvious that other

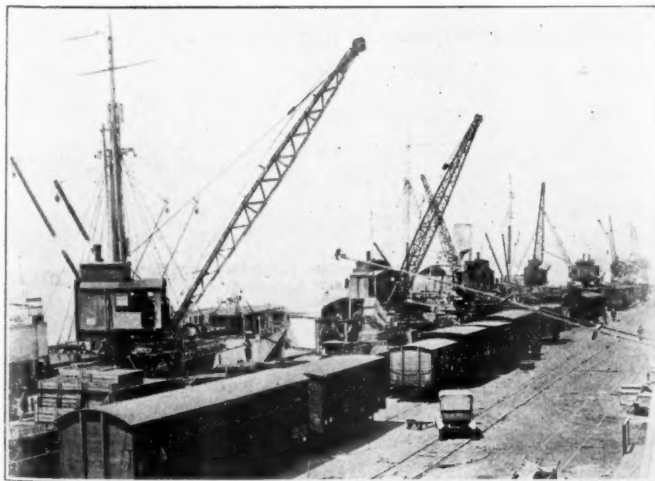
countries would have to send us in exchange either our share of the gold which they were producing or other commodities which we would have had under other circumstances to pay for in gold. After all, is the gold mining industry so important as the gold miners would have us believe?

American Hide & Leather Company

IF ONE WERE to examine only the income account for the fiscal year ended June 30, 1918, and the balance sheet as of that date, it would be hard to realize that the American Hide & Leather Company, since its incorporation in 1899, has been unable to pay dividends even on its seven per cent cumulative preferred stock until 1916, except for a short period in 1906 and 1907. This preferred stock, of which \$13,000,000 is outstanding, sold in the years from 1899 to 1916 at prices ranging from 12 to 60. In the 1918 fiscal year, the company earned \$2,386,000 net, after the payment of expenses, discount, and making allowance for taxes and interest on its bonds. This is equivalent to more than 18 per cent on the outstanding preferred. In 1916 the company made a payment of five per cent on the preferred, and has since been declaring dividends semiannually of two and a half per cent each. A total of 15½ per cent has been paid on the preferred stock since 1899, so that there is an accumulated dividend of about 117 per cent.

The American Hide & Leather Company manufactures about 75 per cent of the total annual output of the tanneries of the United States of upper leather for shoes. It was a combination of about 20 tanneries and leather factories situated in various parts of the country, principally, however, in Boston, Chicago and New York state. There were times in the past when the company was forced to borrow rather heavily from the banks to finance its current accounts.

The change that has come over the earning power and assets position of the company since 1915 is very striking. For the fiscal year ended June 30, 1915, gross sales amounted to \$19,092,000 and, after the payment of expenses and interest charges, there were \$960,000 available for dividends. This compared with \$107,000 available for dividends in 1914. The 1915 balance sheet showed hides, leather and other inventories of \$9,433,000, with \$659,000 cash on hand. There were \$1,500,000 current liabilities. The inventories were about the same in 1914, with only \$468,000 cash on hand and current liabilities of \$2,723,000. On June 30, 1918, there was \$11,889,000 of hides, leather and other inventories, after allowing \$700,000 for possible depreciation



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On the New American Docks in France

in values, and there was \$1,078,000 cash on hand. Total current liabilities amounted to \$3,628,000. Total current assets, including cash and inventories, amounted to \$17,781,000, so that after subtracting the total current liabilities, there was \$14,158,000 net current assets with only \$3,156,000 bonds outstanding. In other words, the \$13,000,000 preferred stock, which is preferred as to assets as well as to earnings, had an equity in \$11,002,000 current assets after the satisfaction of the mortgage bonds from current assets, and, in addition, had a preferred equity in the entire plants and good-will of the company. There was \$85 net current assets, after allowing for outstanding bonds, per \$100 of preferred stock.

At present, the American Hide & Leather Company preferred is selling at about 87. This preferred is followed by \$11,500,000 common stock selling at about 20.

The board of directors of the American Hide & Leather Company is pursuing a rather conservative policy against the protest of a protective committee representing some of the preferred stockholders. Apparently, the directors' position is that, while earnings of 18 per cent of themselves would justify a larger payment toward accumulated dividends than five per cent per year, it is necessary first for the company to so strengthen its working capital as to be able to pretty surely weather any period of depression that might follow the declaration of peace. Thus, while there was only \$627,000 paid out in dividends in the 1918 fiscal year, \$1,400,000 of bills payable were liquidated and the total increase in net current assets was \$1,668,000.

The preferred stock of the American Hide & Leather Company at best is a speculative investment, but for a business man or railroad man with an assured income has a speculative investment with some rather attractive features.

W. H. McElwain Company

THE W. H. M'ELWAIN COMPANY is one of the largest New England shoe manufacturing and wholesale shoe houses and, while extraordinarily high profits in 1916 would surprise no one who has to buy shoes at retail, a falling off in profit, necessitating a reduction in common stock dividends from 12 per cent to 6 per cent in the year ended May 31, 1918, comes rather as a surprise. Especially is this so in view of the fact that the gross sales in the 1918 fiscal year were far and away the greatest in the history of the company and amounted to \$35,553,000. In 1916, the gross sales amounted to \$28,141,000. The net profits in 1918 amounted to \$1,143,000 as compared with \$2,068,000 in 1917.

The McElwain business was established in 1895. The company has outstanding \$4,550,000 first preferred six per cent cumulative stock, \$2,000,000 second preferred six per

cent cumulative stock, and \$2,500,000 common stock. The preferred stock is quite widely distributed, there being 2,307 preferred stockholders in 1918. The common stock, on the other hand, is largely held by directors, managers and officers of the company. The first preferred sold in 1916 as high as 102½ and in the 1917 calendar year ranged in price from 102 to 92½. In other words, it is selling at a price reflecting surety of dividends and a very large equity in assets. Six per cent on the first preferred calls for only \$273,000, and at no time since the incorporation of the present company in 1911 has there been failure to earn this amount several times over; 1915 was one of the worst years for the company, and even in this year there was \$649,000 net earnings.

On May 31, 1918, the company had \$255,000 cash, \$6,712,000 bills receivable, and \$7,608,000 merchandise at cost or less; a total of \$14,575,000 quick assets. Total debts amounted to \$7,421,000, leaving net quick assets to an amount equal to \$157 per share of first preferred stock. This is exclusive of the plant which is valued at \$3,460,000, and of securities in the treasury valued at \$426,000.

It would appear probable that the McElwain Company took government contracts for shoes at a price which allowed it considerably less profit per pair of shoes than it would have made under existing conditions in the manufacture of civilians' shoes. The management planned with care and foresight for 1917-18 and the policy which the company had pursued toward its employees and officers in past years gave it a better strategic position as regards labor than most other employers had.

In 1916-17 the company laid in a large supply of merchandise, it having at the end of the year a total of \$8,527,000 inventories, valued conservatively. This compares with about \$5,000,000 of merchandise carried on hand on an average in previous years. The inventories of May 31, 1918, totaled \$7,608,000. In the 1916-17 year, the company, employing about 7,500 persons, reduced its hours of labor in its New Hampshire factories from 55 to 52 a week and in 1917-18 further reduced them to 50 hours per week. President McElwain says that this reduction of five hours was without any noticeable reduction in output. During 1917-18 608 women replaced men as machine operators on the same basis of pay as the men, and 27 women occupied minor executive positions, and of these 14 came from colleges or professions and were given intensive training.

Besides the common stock interest which many of the officers of the company have, they are further interested in the company's earning power through a bonus system, under which a definite percentage of profits is distributed among executives, superintendents, and foremen in proportion to their salaries. In 1916-17, 187 men participated in this bonus and \$217,000 was distributed. In 1917-18, 197 men



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Running Up Railways to Keep Up with German Retreat

participated, but, with the lower net earnings, only about \$52,000 was distributed as bonuses.

The relation of cash to working capital and working liabilities is rather low, and, although the credit of the company is such that it is unnecessary to carry very large bank balances, it is proposed to issue for cash \$500,000 par value additional common stock. The preferred stock is being retired at the rate of \$50,000 par value a year and the increase in common stock is conservative.

The first preferred stock yielding at the present prices an income of a little over six per cent would appear to be a conservative investment where the man was either not wholly dependent on income from investments or had a considerable part of the remainder of his investments in government, municipal, and first mortgage bonds.

Holly Sugar Corporation

THE CONTRAST between the attitude of mind of a man as a consumer of food products and the same man as an investor in corporation securities is strikingly brought out in the case of the Holly Sugar Corporation. This company was incorporated in 1916, taking over the property of an older corporation which had been for a number of years engaged in the manufacture of sugar from beets. The reorganization was quite conservative, and with the rise in the price of sugar which took place in 1916 and 1917, appeared to be going to work out particularly successfully. As a matter of fact, however, in the fiscal year ended March 31, 1918, the results were far from satisfactory. We have here, therefore, the contrast between what each one of us knows to have been the shortage of sugar and the difficulties of procuring it as a consumer and the comparatively high price which we had to pay for it, with the actual experience of a sugar manufacturing company which, under these same conditions and apparently through no fault of management, could not make a satisfactory financial showing.

In the year ended March 31, 1917, the net profit amounted to \$1,874,000, of which \$381,000 were paid out in dividends and \$312,000 appropriated for the retirement of preferred stock, leaving a balance to be carried to profit and loss of \$1,181,000. In the year ended March 31, 1918, net profit after allowing for reserves for excess profits tax amounted to \$1,197,000. There were \$297,000 paid out in dividends, representing seven per cent on the cumulative preferred stock and \$1,019,000 appropriated for redemption of preferred stock, leaving a small deficit to be carried to profit and loss account.

The company has outstanding now \$4,000,000 par value of seven per cent cumulative preferred stock and 58,000 shares of no par value of common stock. There are no bonds outstanding. In 1916, after the retirement of preferred stock and the payment of dividends on preferred stock, the surplus amounted to over \$20 per share on the common. Of course, there was a very much larger amount of preferred stock retired in 1918, and, while there was nothing left after the payment of preferred dividends and this appropriation for retirement of preferred stock, for dividends on the common, the common had a large equity in the earnings which were used to retire the \$1,019,000 preferred stock. The common stock, therefore, has a large potential earning power even in a year like 1918, but this does not greatly take away from the outstanding fact that, notwithstanding the shortage of sugar and the high price at which it was selling, a conservatively capitalized beet sugar manufacturing company showed a large falling off in profits.

The Food Administration fixed prices in 1917 for both cane and beet sugar, but it is claimed that the price for beet sugar was fixed so near to the price which the Administration fixed for beets that it left a very small margin of profit

to the beet sugar factory. Furthermore, the beet sugar factory prices were on a sliding scale, being highest at the point of production and lowest at the point of delivery to retailers farthest away from the point of production. In other words, the freight rate had to be absorbed in the sugar price set by the beet sugar producers. This scale of prices was adopted because cane sugar comes into the country pretty largely at the seaboard, and at the seaboard the beet sugar has to meet the competition of cane sugar without a railroad freight rate added to it.

The Holly Sugar Corporation's plants are situated at Sheridan, Wyo., Swink, Colo., Huntington Beach, Cal., and, during the 1918 fiscal year, the company bought a controlling interest in the Santa Ana Sugar Company and operated its plant at Santa Ana, Cal., and leased the plant of the Grand Junction Sugar Company at Grand Junction, Colo. It would appear, therefore, that the amount of manufacturing done must have been much larger in 1918 than in 1917, and yet the net profit from this larger business was less this year than in the previous year. Furthermore, notwithstanding the shortage of sugar, the acreage, planted to beets under contract, is estimated to be 25 per cent less in the fiscal year ending March 31, 1919, than it was in the 1918 fiscal year. This is because of the relatively greater profits to farmers offered under the price fixed for wheat by the Government than that fixed for sugar beets. Not only, therefore, does the sugar manufacturing company face a great curtailment of profits due to the small margin between the price fixed for its raw materials—sugar beets—and its finished product—sugar—but the price fixed for sugar beets is so low as to endanger the beet growing industry of the country.

The working capital situation of the Holly Sugar Corporation is fairly good. Total current liabilities amount to only \$132,000, of which \$29,000 is accounts payable and \$70,000 dividends payable May 1, 1918, on the preferred stock. Total current assets amounted to \$1,663,000, which included \$264,000 cash, \$837,000 inventories of refined sugar and stock in process of refining and supplies and \$316,000 notes and accounts receivable.

The beet sugar interests have appealed to Herbert Hoover, the National Food Administrator, and if a more liberal policy is pursued both toward the beet farmer and the refinery, the preferred stock of the Holly Sugar Corporation offers rather attractive speculative possibilities. The margin of safety which the company is earning for the preferred, even under such conditions as those that prevailed in the fiscal year ended March 31, 1918, is large. Even after the close of the war there ought to be a continuing demand for sugar which will assure a high price for some time, as compared with pre-war prices.

When normal conditions are restored in the ocean carrying trade, and sugar from Java can again compete in world markets, it may be that sugar prices will tend strongly downward; but even under such conditions the seven per cent preferred dividend on the Holly Corporation stock appears to be pretty well assured.

Pacific Development Corporation

ONE OF THE QUESTIONS most often asked in regard to building up a large export business for the United States after the war is that as to how payment for our goods is to be made by foreign countries. The answer is that it should be paid for in part by credit, and in part by trade; that is, by products of these foreign countries. That was the method adopted by England, and it was largely due to the fact that the majority of the other countries of the world owed England—had paid for goods received by credit—that England was able to so largely finance her allies

as well as herself in the first three years of the war. A few of the great companies and banks, like the Guaranty Trust and the National City, are making rapid progress in establishing the facilities for credit payments by other countries for United States goods, and some of the larger manufacturing companies are making efforts to at least fully inform themselves of the possibilities of building up an export business. Trading companies, however, are comparatively few; we have a certain number, some of them immensely successful, such as W. R. Grace & Co. and Gaston, Williams & Wigmore.

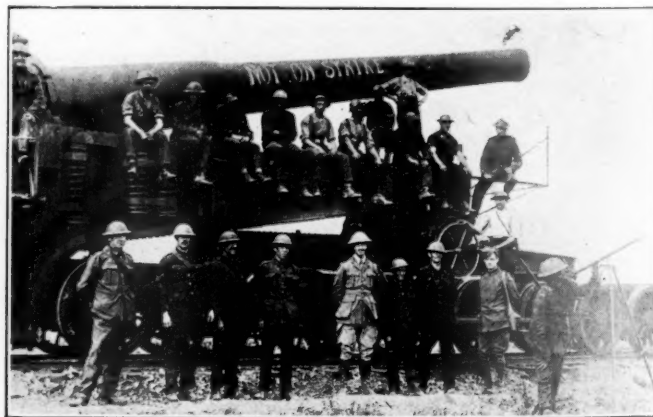
A new company was formed in January, 1917, combining various well-established businesses under a single general direction with the object of combining in a scientific way the various functions of American foreign trade. There were five principal companies taken into this holding company organization: The Pacific Commercial Company, the largest trading company in the Philippine Islands; Anderson, Meyer & Co., Ltd., doing a general export and import business in China, but principally selling engineering and machinery to that country; Hartmann Brothers, Inc., doing a general importing business of foreign merchandise into this country; the International Vegetable Oil Company, manufacturing cottonseed oil in this country and vegetable oil in the Orient; and the American Machine & Mfg. Co., manufacturing vegetable oil machinery. Since a good part of the products of the Philippine and quite a part of the Oriental territory, covered by Andersen, Meyer products, are copra and other oil-bearing seeds and nuts, it will be seen how nicely the various parts of the trading business have been combined under the new holding company. The inclusion of a company manufacturing vegetable oil producing machines is a rounding out of the business which would appear to hold out large possibilities of traffic. The increase in the consumption of vegetable oils in place of butter and animal products has been very rapid, and the scarcity and high price of milk and, therefore, butter must continue for some years after the war, since it takes about seven years to build up a dairying herd of cattle.

The Pacific Development Corporation thus answers to a large extent, in its organization for business, this question of how foreign countries are to pay for our exports. The Philippine company will take vegetable oils and credit in exchange for all kinds of merchandise from this country; the Chinese trading company will take vegetable oils, Oriental goods and credit in payment for machinery, manufactures and engineering service; the vegetable oil company will manufacture these products in part in its mills in the Orient and in part in its mills in the south of the

United States to take up the slack period when these southern states' mills are not manufacturing cottonseed oil; and the products other than vegetable oil, taken from the Orient and the Philippines in payment for American goods, will be sold in this country through the organization of Hartmann Brothers. The buying organization of the Philippine trading company and the Chinese trading company can be utilized as a means of locating and developing markets for the machine and manufacturing company.

The Pacific Development Corporation had outstanding at the end of 1917 \$4,139,000 par value of stock, divided in 82,773 shares of \$50 par value each. Since January 1, an additional \$1,506,000 par value of stock has been sold. The company is paying dividends at the rate of seven per cent per year. The net profits accruing to the Development Corporation for 1917 amounted to \$1,227,000. Dividends at the seven per cent rate were not begun until August, so that only \$112,000 was paid out in dividends. Not all of the profits which accrued to the parent company, however, were declared by the subsidiary companies in dividends so that the Development Corporation's income account shows a total income of \$335,000, with expenses and provisions for income and excess profits' taxes of \$119,000, leaving \$216,000 net from which \$112,000 dividends were paid and \$103,000 carried to the Pacific Development Corporation's surplus account.

It must be borne in mind when considering the Development Corporation's stock as an investment that the assets consist of stock of other companies. It has practically no physical assets of its own except these investments. An investment in Pacific Development Corporation's stock is an investment in the earning power of the combined subsidiaries without further security, but, under present conditions, this earning power is large. The development corporation carries the stocks of its subsidiary companies on its balance sheet at a valuation of \$4,497,000, and it will be recalled that net profits amounted in 1917 to \$1,227,000 or 27 per cent on this valuation. The Development corporation at the end of 1917 had \$220,000 cash on hand. It had notes payable serially from April, 1918, to December, 1918, totalling \$775,000. The sale of \$1,506,000 stock should and presumably has taken care of the payments due on these notes and additional capital required for a rapidly expanding business. The sales of the company so far this year are running 61 per cent in excess of the sales in 1917. As a semi-speculative investment for a business man or salaried man, not dependent on income from investments, the stock of the Pacific Development Corporation, looks quite attractive.



With the Big Guns